
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 8-K

CURRENT REPORT

**Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934**

Date of Report (Date of Earliest Event Reported): October 20, 2011

Arrowhead Research Corporation

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation)

0-21898
(Commission
File Number)

46-0408024
(I.R.S. Employer
Identification No.)

**225 South Lake Avenue, Suite 300, Pasadena, CA
91101**

(Address of principal executive offices)

91101
(Zip Code)

Registrant's telephone number, including area code: (626) 304-3400

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
 - Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
 - Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
 - Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
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Item 1.01 Entry into a Material Definitive Agreement

Lincoln Park Capital Purchase Agreement

On October 20, 2011, Arrowhead Research Corporation (the “Company”) and Lincoln Park Capital Fund, LLC, an Illinois limited liability company (“LPC”) entered into a \$15 million purchase agreement (the “Purchase Agreement”), together with a registration rights agreement, whereby LPC agreed to purchase up to \$15 million of Company common stock, subject to certain limitations, from time to time during the three-year term of the Purchase Agreement. Additionally, the Company agreed to file a registration statement with the U.S. Securities & Exchange Commission (“SEC”) covering the resale of the shares that have been or may be issued to LPC under the Purchase Agreement. After the SEC declares effective the registration statement related to the resale of such shares, the Company will have the right, in its sole discretion, over a 36-month period to sell up to \$15 million of common stock (subject to certain limitations) to LPC, depending on certain conditions as set forth in the Purchase Agreement.

There are no upper limits to the price LPC may pay to purchase the Company’s common stock and the purchase price of the shares related to the \$15 million of additional future funding under the Purchase Agreement will be based on the prevailing market prices of the Company’s shares immediately preceding the time of sales without any fixed discount. The Company will control the timing and amount of any future sales, if any, of shares to LPC. LPC shall not have the right or the obligation to purchase any shares of our common stock on any business day that the price of our common stock is below the floor price, as set forth in the Purchase Agreement.

The Purchase Agreement contains customary representations, warranties, covenants, closing conditions and indemnification and termination provisions by, among and for the benefit of the parties. Additionally, sales to LPC under the Purchase Agreement may be limited, to the extent applicable, by NASDAQ Marketplace Rules. LPC has covenanted not to cause or engage in any manner whatsoever, any direct or indirect short selling or hedging of the Company’s shares of common stock. In consideration for entering into the \$15 million agreement, we paid a \$269,500 commitment fee, which was paid in stock valued at \$0.391 per share, and will pay a further commitment fee of up to \$346,500, pro rata, as the facility is used over time, which will also be paid in stock valued at \$0.391 per share. The Purchase Agreement may be terminated by us at any time at our discretion without any cost to us. The proceeds received by the Company under the purchase agreement are expected to be used for general operations.

The offering and sale of the common stock under the Purchase Agreement was exempt from registration under Section 4(2) of the Securities Act of 1933 and Rule 506 of Regulation D promulgated thereunder.

The foregoing description of the purchase agreement and the registration rights agreement are qualified in their entirety by reference to the full text of the purchase agreement and the registration rights agreement, a copy of each of which is attached hereto as Exhibit 10.1 and 10.2, respectively, and each of which is incorporated herein in its entirety by reference.

Preferred Stock Financing

On October 21, 2011 and October 24, 2011, the Company entered into Subscription Agreements (the “Series A Subscription Agreements”) with certain accredited investors (the “Series A Purchasers”), pursuant to which the Company agreed to issue and sell an aggregate of 1,015 shares of Series A Preferred Convertible Stock, \$0.001 par value per share (the “Series A Preferred”), at a purchase price of \$1,000 per share. The aggregate purchase price to be paid by the Series A Purchasers for the shares of Series A Preferred is \$1,015,000. The closing of the sale of the Shares is expected to occur on October 26, 2011.

Upon receipt of stockholder approval, each share of Series A Preferred will automatically convert into 2,631.58 shares of common stock, subject to a 19.99% beneficial ownership conversion limit. The rights, preferences and privileges of the Series A Preferred are set forth below under Item 5.03.

Pursuant to the terms of the Series A Subscription Agreements, the Company agreed to seek stockholder approval for the conversion of the Series A Preferred into common stock (the “Conversion Shares”). Also, the Series A Purchasers have agreed not to exercise their conversion rights until after stockholder approval is received.

The Series A Subscription Agreements require the Company to register the resale of the Conversion Shares. The Company is required to prepare and file a registration statement with the SEC within 30 days of stockholder approval of the issuance of the Conversion Shares, and to use commercially reasonable efforts to have the registration statement declared effective within 180 days.

The offering and sale of the Series A Preferred was exempt from registration under Section 4(2) of the Securities Act of 1933 and Rule 506 of Regulation D promulgated thereunder, with respect to certain purchasers, and under Regulation S promulgated under the Securities Act of 1933, with respect to the other purchasers. The above description of the material terms of the Series A Preferred offering is qualified in its entirety by reference to the form of Series A Subscription Agreement attached hereto as Exhibit 10.3.

Common Stock Financing

On October 21, 2011, the Company entered into a Subscription Agreement (the “Common Subscription Agreement”) with a single accredited investor (the “Common Shares Purchaser”), pursuant to which the Company agreed to issue and sell an aggregate of 6,750,000 shares of common stock, \$0.001 par value per share (the “Common Shares”), at a purchase price of \$0.37 per share. The aggregate purchase price to be paid by the purchaser for the shares of common stock was \$2,497,500. The closing of the sale of the Common Shares is expected to occur on October 26, 2011.

The Common Subscription Agreement requires the Company to register the resale of the Common Shares. The Company is required to prepare and file a registration statement with the Securities and Exchange Commission within 90 days of the closing of the offering, and to use commercially reasonable efforts to have the registration statement declared effective within 180 days.

The above description of the material terms of the offering is qualified in its entirety by reference to the form of Common Subscription Agreement attached hereto as Exhibit 10.4.

The offering and sale of the Common Shares was exempt from registration under Regulation S promulgated under the Securities Act of 1933.

Item 3.02 Unregistered Sales of Equity Securities

The information contained above in Item 1.01 under the captions, “Lincoln Park Capital Purchase Agreement”, “Preferred Stock Financing” and “Common Stock Financing” is hereby incorporated by reference into this Item 3.02.

Item 3.03 Material Modification to Rights of Security Holders

The information contained below in Item 5.03 is hereby incorporated by reference into this Item 3.03.

Item 5.03 Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year

On October 25, 2011, the Company filed a Series A Certificate of Designation with the Delaware Secretary of State for the purpose of creating, from its authorized but unissued “blank check” preferred stock a class of 10,000 shares of preferred stock, designated as the Company’s Series A Shares Convertible Preferred Stock (the “Series A Shares”), and fixing the respective rights, preferences, privileges and restrictions of the Series A Shares.

Set forth below is a summary of the respective rights, preferences, and privileges of and the restrictions on the Series A Shares. The summary is not intended to be a complete statement as to the respective rights, preferences, and privileges of the Series A Shares and is qualified in its entirety by reference to the Series A Certificate of Designation, a copy of which is attached as Exhibit 3.1 to this Current Report.

Summary of Rights, Preferences, and Privileges of Series A Shares

Ranking. The Series A Shares will, with respect to rights upon liquidation, dissolution, or winding up of the Company, rank senior to the Company’s common stock and any class or series of Company capital stock hereafter

created which does not provide that such shares of capital stock rank on parity with or senior to the Series A Shares as to rights on liquidation, winding-up and dissolution of the Company.

Conversion Rights. Each Series A Share will be convertible, at the option of the holders thereof, into an a number of shares of the Company's common stock equal to \$1,000 divided by \$0.38.

Holders may not convert any Series A Shares into shares of the Company's common stock if, after giving effect to such conversion, such holder would beneficially own in excess of 19.99% of the number of shares of the Company's common stock outstanding immediately after giving effect to such conversion.

Dividends. Holders of Series A Shares shall be entitled to receive a cumulative dividend of 10% of the face amount of the Series A Shares per annum, which will accrue semi-annually, from the date of issue through the date the shares are eligible for conversion pursuant to the Series A Subscription Agreement, and will be paid on June 30 and December 31 of each year in preference to any dividends to be paid on the Common Stock or any junior securities.

Liquidation Preference. In the event of any liquidation, dissolution or winding up of the Company, the holders of Series A Shares shall be entitled to receive, prior and in preference to any distribution of any of the assets or surplus funds of the Company to the holders of the Common Stock by reason of their ownership thereof, an amount equal to \$1,000 per each Series A Share then held by holders of Series A Shares. If upon the occurrence of such event, the assets and funds distributed among the holders of the Series A Shares shall be insufficient to permit the payment of the full preferential amount, then the entire assets and funds of the Company legally available for distribution shall be distributed ratably among the holders of the Series A Shares in proportion to the preferential amount each such holder is otherwise entitled to receive.

Voting Rights. The Series A Shares do not have any voting rights, except with respect to the protective provisions discussed below.

Protective Provisions. So long as any shares of Series A Shares are outstanding, in addition to any other vote or approval required under the Company's Certificate of Incorporation or By-laws, as amended, the Company will not, without the consent of the holders of a majority of the outstanding shares of Series A shares, either directly or by amendment, merger, consolidation, or otherwise: (i) amend, alter, or repeal any provision of the Certificate of Incorporation or Bylaws in a manner adverse to the Series A Shares or (ii) increase the authorized number of shares of Series A Shares or issue additional shares of Series A Shares, except as may be necessary to pay dividends on the outstanding shares of Series A Shares.

Item 9.01. Financial Statements and Exhibits

Exhibit No.	Description
3.1	Series A Certificate of Designations
10.1	Purchase Agreement, dated as of October 20, 2011, by and between the Company and Lincoln Park Capital Fund, LLC.
10.2	Registration Rights Agreement, dated as of October 20, 2011, by and between the Company and Lincoln Park Capital Fund, LLC.
10.3	Form of Series A Subscription Agreement
10.4	Form of Common Stock Subscription Agreement

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: October 26, 2011

ARROWHEAD RESEARCH CORPORATION

By: /s/ Kenneth Myszowski

Kenneth Myszowski
Chief Financial Officer

Exhibit Index

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**CERTIFICATE OF DESIGNATIONS,
PREFERENCES AND RIGHTS**

of

SERIES A CONVERTIBLE PREFERRED STOCK

of

ARROWHEAD RESEARCH CORPORATION

(Pursuant to Section 151 of the
Delaware General Corporation Law)

Arrowhead Research Corporation, a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies that the Board of Directors of the Corporation (the "Board of Directors" or the "Board") pursuant to authority of the Board of Directors under Section 151 of the Delaware General Corporation Law ("DGCL"), and in accordance with the provisions of its Certificate of Incorporation and Bylaws, adopted the following resolution on October 20, 2011, which authorizes a series of the Corporation's Preferred Stock, par value \$0.001 per share (the "Preferred Stock"):

RESOLVED, that the Board of Directors of the Corporation, pursuant to authority expressly vested in it by the Certificate of Incorporation of the Corporation, hereby creates a series of Preferred Stock, par value \$0.001 per share, with such respective voting powers and with such respective designations, preferences and relative, participating, optional and other special rights and qualifications, limitations and restrictions, as set forth below:

I. DESIGNATION AND AMOUNT

The designation of the new series, which consists of 10,000 shares of Preferred Stock, is the Series A Convertible Preferred Stock (the "Series A Preferred Stock").

II. CERTAIN DEFINITIONS

For purposes of this Certificate of Designations, the following terms shall have the following meanings:

- A. "Beneficial Ownership" and "Beneficially Owns" shall be determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Regulations 13D-G thereunder.
- B. "Change of Control" shall mean any of the following:
 - (i) the consolidation, merger or other business combination of the Corporation with or into another entity (other than a consolidation, merger or other business combination in which holders of the Corporation's voting power immediately prior to the transaction continue after the

transaction to hold, directly or indirectly, in substantially the same proportion as immediately preceding the transaction, the voting power of the surviving entity or entities necessary to elect a majority of the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities);

- (ii) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation (including, without limitation, any such action effected by the Corporation or any subsidiary of the Corporation by merger, consolidation or otherwise) of all or substantially all of the intellectual property or assets of the Corporation and its subsidiaries, taken as a whole; or
 - (iii) the sale, in a single transaction or series of transactions, of Common Stock and/or Preferred Stock ("Capital Stock") to any purchaser (a "Purchaser") who, with the Purchaser's affiliates, Beneficially Owns immediately after such purchase either: (A) a majority of the outstanding Capital Stock of the Corporation, determined on an as-converted basis or (B) a number of shares of Capital Stock that would entitle the holder(s) thereof to elect a majority of the Board.
- C. "Closing Date" means the date of the closing under the Series A Preferred Subscription Agreement, dated October 21, 2011, by and among the Corporation and the purchasers named therein, as the same may be amended from time to time (the "Purchase Agreement").
- D. "Closing Sales Price" means, as of any date, (i) the last trading price of the Common Stock on the principal Trading Market during regular trading hours on which such security is listed or traded as reported by Bloomberg Financial L.P. (or a comparable reporting service of national reputation selected by the Corporation and reasonably acceptable to the Requisite Holders, if Bloomberg Financial L.P. is not then reporting closing sales prices of the Common Stock) (collectively, "Bloomberg") or (ii) if no last trading price is so reported for such date, the average of the closing bid and ask prices on the principal Trading Market during regular trading hours on which such security is listed or traded as reported by Bloomberg. If the Closing Sales Price cannot be calculated for such Common Stock as of any of such dates on any of the foregoing bases, the Closing Sales Price on such date shall be the fair market value as reasonably determined by an investment banking firm selected by the Requisite Holders and reasonably acceptable to the Corporation, with the reasonable costs of such determination to be borne by the Corporation.
- E. "Common Stock" means the Corporation's common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may hereafter be reclassified or changed into.

- F. “Common Stock Equivalents” means any securities of the Corporation that would entitle the holder thereof to acquire, directly or indirectly, at any time, Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other agreement, document or instrument that is at any time convertible into, exercisable for or exchangeable for, or otherwise entitles the holder thereof to receive, directly or indirectly, Common Stock.
- G. “Conversion Date” means, for any Optional Conversion, the date specified in the notice of conversion in the form attached hereto (the “Notice of Conversion”), so long as a copy of the Notice of Conversion is delivered via electronic mail resulting in notice to the Corporation before 11:59 p.m., New York City time, on the Conversion Date indicated in the Notice of Conversion; *provided, however*, that if the Notice of Conversion is not so e-mailed before such time, then the Conversion Date shall be the date the holder e-mails the Notice of Conversion to the Corporation.
- H. “Conversion Price” means \$0.38.
- I. “Face Amount” shall mean, with respect to the Series A Preferred Stock, \$1,000 per share, as adjusted for stock splits, stock dividends, combinations, recapitalizations, reclassifications or the like.
- J. “Original Issue Date” means, with respect to each share of Series A Preferred Stock, the date of issuance of such share.
- K. “Other Stock” means (i) any class or series of preferred stock or other capital stock of the Corporation, other than Common Stock, Common Stock Equivalents and Series A Preferred Stock, and (ii) any securities of the Corporation or of any subsidiary of the Corporation that would entitle the holder thereof to acquire, directly or indirectly, at any time any capital stock listed in clause (i), including, without limitation, any debt, preferred stock, right, option, warrant or other agreement, document or instrument that is at any time convertible into, exercisable for or exchangeable for, or otherwise entitles the holder thereof to receive, directly or indirectly, any capital stock listed in clause (i).
- L. Unless otherwise expressly provided in this Certificate of Designations, each reference to a “person” refers to any individual, entity or association, including, without limitation, any corporation, limited partnership, general partnership, joint stock company, joint venture, association, company, trust, bank, trust company, and trust, business trust or other organization, whether or not a legal entity, or a government or agency or any political subdivision thereof.
- M. “Requisite Holders” means the holders of a majority of the then outstanding shares of Series A Preferred Stock, voting together as one class.

- N. “**Trading Day**” means, except as set forth below, a day on which the Corporation’s securities are traded on a Trading Market; *provided, however*, that in the event that the Corporation’s securities are not traded on a Trading Market, then Trading Day shall mean any day except Saturday, Sunday and any day on which banking institutions in the State of New York are authorized or required by law or other government action to close.
- O. “**Trading Market**” means the OTC Bulletin Board or the Pink Sheets, the NASDAQ Global Select Market, the NASDAQ Global Market, the NASDAQ Capital Market, the New York Stock Exchange, the NYSE, Amex or any of the markets operated by the OTC Markets Group, Inc., or any successor markets thereto.

III. DIVIDENDS

- A. Holders of Series A Preferred shall be entitled to receive a cumulative dividend of 10% of the Face Amount per annum, which will accrue semi-annually with respect to each share of Series A Preferred, from the applicable date of issue through the date of Stockholder Approval (as defined in the Section 9 of the Purchase Agreement), and will be paid on June 30 and December 31 of each year in preference to any dividends to be paid on the Common Stock or any Junior Securities (as defined below). Such dividends shall be payable in additional shares of Series A Preferred Stock valued for this purpose at the Face Amount; *provided, however*, that if such additional shares of Series A Preferred Stock are not legally available for the payment of dividends on the Series A Preferred Stock, such dividends shall, effective on the close of business on a dividend payment date with respect to an unpaid dividend, accrete to, and increase, the Face Amount of the Series A Preferred Stock. If any such cumulative dividends would result in the issuance of a fractional share of Series A Preferred Stock, the Corporation shall issue a fractional share therefor, rounded to the nearest 1/1000th of a share. For the avoidance of doubt, in the event of a conversion that occurs between semi-annual accrual dates, dividends shall be deemed to accrue through the date of such conversion, even if such accrual is less than a full semi-annual dividend period.
- B. For any other dividends or distributions by the Corporation, Holders of Series A Preferred Stock will participate with the holders of Common Stock on an as-converted basis.

IV. CONVERSION

- A. Conversion at the Option of the Holder. Subject to the limitations on conversions contained in Paragraph C. of this Article IV. and Section 9 of the Purchase Agreement, each holder of shares of Series A Preferred Stock may, at any time and from time to time, convert (an “Optional Conversion”) each of its shares of Series A Preferred Stock into a number of fully paid

and non-assessable shares of Common Stock determined in accordance with the following formula:

$$\frac{\text{Face Amount}}{\text{Conversion Price}}$$

- B. Mechanics of Conversion. In order to effect an Optional Conversion, a holder shall deliver a copy of the fully executed Notice of Conversion (in the form attached hereto) to the Corporation.
- (i) Delivery of Common Stock Upon Conversion. The Corporation (itself, or through its transfer agent) shall promptly issue and deliver (i.e., deposit with a nationally recognized overnight courier service postage prepaid) to the holder or its nominee a certificate representing that number of shares of Common Stock issuable upon conversion of such shares of Series A Preferred Stock being converted.
- (ii) No Fractional Shares. If any conversion of Series A Preferred Stock would result in the issuance of a fractional share of Common Stock, such fractional share shall be payable in cash based upon the Closing Sales Price on the Trading Day immediately preceding the Conversion Date and the number of shares of Common Stock issuable upon conversion of the Series A Preferred Stock shall be the next lower whole number of shares.
- C. Limitations on Conversions. Notwithstanding anything in this Certificate of Designations to the contrary, in no event shall any holder of shares of Series A Preferred Stock have the right to convert shares of Series A Preferred Stock into shares of Common Stock (x) to the extent that such issuance or sale or right to effect such conversion would result in the holder or any of its affiliates together Beneficially Owning more than 19.99% of the then issued and outstanding shares of Common Stock or (y) if such holder or any of its affiliates together Beneficially Own more than 19.99% of the then issued and outstanding Common Stock immediately prior to such purported issuance, sale, transfer or conversion. The restriction contained in this Paragraph C. may not be waived. Any purported conversion effected in violation of this Paragraph C. shall be null and void. Certificates representing shares of Series A Preferred Stock shall have imprinted, typed, stamped or otherwise affixed thereon a legend in substantially the following form:

THE SHARES OF STOCK REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO TRANSFER AND CONVERSION RESTRICTIONS AND MAY BE TRANSFERRED OR CONVERTED ONLY AS PERMITTED BY THE TERMS OF THE CERTIFICATE OF DESIGNATIONS SETTING FORTH THE RIGHTS, POWERS AND PREFERENCES OF SUCH PREFERRED STOCK, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE CORPORATION AND SHALL BE PROVIDED FREE OF CHARGE UPON A REQUEST THEREFOR SUBMITTED TO THE SECRETARY.

V. RESERVATION OF SHARES OF COMMON STOCK

- A. If the authorized and unissued number of shares of Common Stock (the “Reserved Amount”) for any five consecutive Trading Days (the last of such three Trading Days being the “Authorization Trigger Date”) shall be less than a number sufficient to provide for the conversion in full, at the then current Conversion Price thereof, without taking into account the limitations on conversion set forth in Article IV.C., of all of the Series A Preferred Stock (i) then outstanding; (ii) then issuable; and (iii) then issuable as the payment of dividends on the Series A Preferred Stock described in clause (i) or (ii) for a period of 12 months (the “Required Reserve Amount”), then the Corporation shall immediately notify the holders of Series A Preferred Stock of such occurrence and shall take immediate action (including, if necessary, seeking stockholder approval to increase the number of shares of Common Stock that the Corporation is authorized to issue) to increase the Reserved Amount to the Required Reserve Amount.

VI. RANK

All shares of the Series A Preferred Stock shall rank (i) senior to (a) the Corporation’s Common Stock; (b) the Common Stock Equivalents in existence as of the Closing Date; and (c) any Common Stock Equivalents and any Other Stock created after the Closing Date (unless, such Common Stock Equivalents or Other Stock specifically, by their terms, rank senior to or pari passu with the Series A Preferred Stock) (collectively with the Common Stock and the Common Stock Equivalents in existence as of the Closing Date, “Junior Securities”); (ii) pari passu with any Common Stock Equivalents and Other Stock created after the Closing Date specifically ranking, by their terms, on parity with the Series A Preferred Stock (the “Pari Passu Securities”); and (iii) junior to any Common Stock Equivalents or Other Stock created after the Closing Date specifically ranking, by their terms, senior to the Series A Preferred Stock (collectively, the “Senior Securities”), in each case as to dividends or distribution of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary. Each share of Series A Preferred Stock shall rank pari passu with each other share of Series A Preferred Stock as to dividends and distribution of assets upon liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary.

VII. LIQUIDATION PREFERENCE

- A. If the Corporation:
- (i) shall liquidate, dissolve or wind up;
 - (ii) enters into a merger or consolidation (other than one in which stockholders of the Corporation own a majority by voting power of the outstanding shares of the surviving or acquiring corporation); or
 - (iii) sale, lease, transfer or other disposition of all or substantially all of the assets of the Corporation;

each (a “Deemed Liquidation Event”), then in each case, no distribution shall be made to the holders of any shares of capital stock of the Corporation (other than Senior Securities pursuant to the rights, preferences and privileges thereof) upon liquidation, dissolution or winding up unless prior thereto the holders of shares of Series A Preferred Stock shall have received the Liquidation Preference with respect to each share then outstanding. If, upon the occurrence of a Deemed Liquidation Event, the assets and funds legally available for distribution among the holders of the Series A Preferred Stock and holders of Pari Passu Securities, if any, shall be insufficient to permit the payment to such holders of the preferential amounts payable thereon, then the entire assets and funds of the Corporation legally available for distribution to the Series A Preferred Stock and the Pari Passu Securities, if any, shall be distributed ratably among such shares in proportion to the ratio that the Liquidation Preference payable on each such share bears to the aggregate Liquidation Preference payable on all such shares.

- B. The purchase or redemption by the Corporation of stock of any class, in any manner permitted by law, if approved by the Requisite Holders, shall not, for the purposes hereof, be regarded as a liquidation, dissolution or winding up of the Corporation.
- C. The “Liquidation Preference” with respect to a share of Series A Preferred Stock means an amount equal to the Face Amount thereof plus all accrued and unpaid dividends on the Series A Preferred Stock (as adjusted for any stock dividends, combinations, splits, recapitalizations and the like with respect to such shares). The Liquidation Preference with respect to any Pari Passu Securities, if any, shall be as set forth in the Certificate of Designations filed in respect thereof.

VIII. ADJUSTMENTS TO THE CONVERSION PRICE

The Conversion Price shall be subject to adjustment from time to time as follows:

- A. Stock Splits, Stock Dividends, Etc. If, at any time on or after the Closing Date, the number of outstanding shares of Common Stock is increased by a stock split, stock dividend, combination, reclassification or other similar event (in each case, whether by merger or otherwise), then, after the date of record for such event, the Conversion Price shall be proportionately reduced. If the number of outstanding shares of Common Stock is decreased by a reverse stock split, combination or reclassification of shares, or other similar event (in each case, whether by merger or otherwise), then, after the date of record for such event, the Conversion Price shall be proportionately increased. In any such event described in this Paragraph A., the Corporation shall notify the Corporation’s transfer agent of such change on or before the effective date thereof.

- B. Adjustment Due to Merger, Consolidation, Etc. With respect to each share of Series A Preferred Stock, if, at any time after the Closing Date, there shall be:
- (i) any recapitalization, reclassification or change of the outstanding shares of Common Stock (but not of such share of Series A Preferred Stock), other than a change in par value, or from par value to no par value, or from no par value to par value, or as a result of a transaction causing an adjustment pursuant to Article VIII.A.; or
 - (ii) any share exchange pursuant to which all of the outstanding shares of Common Stock (but not such share of Series A Preferred Stock) are converted into or exchanged for capital stock or other securities of the Corporation or any subsidiary of the Corporation or any other person (or the right to receive any such securities) or into any property (including, without limitation, cash and the right to receive cash or other property) or into any combination of the foregoing (each of Subparagraphs (i)–(ii) of this Paragraph B. being a “Corporate Change”);
- then in each case, the holder of such share of Series A Preferred Stock shall thereafter have the right to receive upon conversion, in lieu of the shares of Common Stock otherwise issuable, such shares of stock, securities and/or other property as would have been issued or payable in such Corporate Change if such share of Series A Preferred Stock had been converted into Common Stock immediately prior to such Corporate Change without taking into account the limitations on conversion set forth in Article IV.

IX. VOTING RIGHTS

- A. The holders of the Series A Preferred Stock have no voting power whatsoever, except as otherwise required by the DGCL, or as expressly contemplated herein.
- B. To the extent that under the DGCL the vote of the holders of the Series A Preferred Stock, voting together as a single class, is required to authorize a given action of the Corporation, the affirmative vote of the Requisite Holders (except as otherwise may be required under the DGCL) shall constitute the approval of such action by such class. To the extent that under the DGCL holders of the Series A Preferred Stock are entitled to vote on a matter with holders of Common Stock, voting together as one class, each share of Series A Preferred Stock shall be entitled to a number of votes equal to the number of shares of Common Stock into which it is then convertible (subject to the limitations on conversion contained in Article IV.C.) using the record date for the taking of such vote of stockholders as the date as of which the Conversion Price is calculated. The Corporation shall not (i) combine the outstanding shares of any series of Series A Preferred Stock into a smaller number of shares of such series

(whether by reclassification, merger, stock split or otherwise) or (ii) subdivide the outstanding shares of any series of Series A Preferred Stock into a greater number of shares of such series (whether by reclassification, merger, stock split, stock dividend or otherwise) without the approval (by vote or written consent, as provided by the DGCL) of the Requisite Holders.

X. PROTECTION PROVISIONS

So long as any shares of Series A Preferred Stock are outstanding, in addition to any other vote or approval required under the Corporation's Certificate of Incorporation or Bylaws, the Corporation shall not, without the consent of the Requisite Holders, either directly or by amendment, merger, consolidation, or otherwise:

- A. amend, alter, change or repeal any provision of the Corporation's (i) Bylaws or (ii) Certificate of Incorporation (including, for the avoidance of doubt, any Certificate of Designation or Certificate of Designations (including this Certificate of Designations) filed pursuant to Section 151(g) of the DGCL), so as to affect the Series A Preferred Stock adversely (including, but not limited to, increasing the authorized number of shares of Series A Preferred Stock (except as may be necessary to allow the Corporation to fulfill the obligations of the Corporation in Article III); or
- B. increase the authorized number of shares of Series A Preferred Stock or issue additional shares of Series A Preferred Stock (except for the issuance of additional shares of Series A Preferred Stock as may be necessary to allow the Corporation to fulfill the obligations of the Corporation in Article III).

XI. MISCELLANEOUS

- A. Cancellation of Series A Preferred Stock. If any shares of Series A Preferred Stock are converted pursuant to Article IV, the Corporation shall take all actions necessary to cause the shares so converted to be canceled and return to the status of authorized, but unissued preferred stock of no designated series.
- B. Lost or Stolen Certificates. Upon receipt by the Corporation of (i) evidence of the loss, theft, destruction or mutilation of any stock certificate(s) representing shares of Series A Preferred Stock (each a "Preferred Stock Certificate") and (ii) (y) in the case of loss, theft or destruction, of indemnity (without any bond or other security) reasonably satisfactory to the Corporation, or (z) in the case of mutilation, upon surrender and cancellation of the Preferred Stock Certificate(s), the Corporation shall execute and deliver Series A Preferred Stock Certificate(s) of like tenor and date. However, the Corporation shall not be obligated to reissue such lost or stolen Preferred Stock Certificate(s) if the holder contemporaneously

requests the Corporation to convert in full all shares of Series A Preferred Stock represented by such Preferred Stock Certificate(s).

- C. Allocation of Reserved Amount. The Reserved Amount shall be allocated pro rata among the holders of Series A Preferred Stock based on the number of shares of Series A Preferred Stock issued to each holder then held of record by such holder. Each increase to the Reserved Amount shall be allocated pro rata among the holders of Series A Preferred Stock based on the number of shares of Series A Preferred Stock held by each holder at the time of the increase Reserved Amount. Any portion of the Reserved Amount which remains allocated to any person or entity which does not hold any Series A Preferred Stock shall be allocated to the remaining holders of shares of Series A Preferred Stock, pro rata based on the number of shares of Series A Preferred Stock then held of record by such holders.
- D. Status as Stockholder. Upon submission of a Notice of Conversion by a holder of Series A Preferred Stock, (i) the shares covered thereby shall be deemed converted into shares of Common Stock and (ii) the holder's rights as a holder of such converted shares of Series A Preferred Stock shall cease and terminate, excepting only the right to receive certificates for such shares of Common Stock and to any remedies provided herein or otherwise available at law or in equity to such holder because of a failure by the Corporation to comply with the terms of this Certificate of Designations.
- E. Waiver. Notwithstanding any provision in this Certificate of Designations to the contrary, any provision contained herein and any right of the holders of Series A Preferred Stock granted hereunder may be waived as to all shares of Series A Preferred Stock (and the holders thereof) upon the written consent of the Requisite Holders, unless a higher percentage is required by applicable law, in which case the written consent of the holders of not less than such higher percentage shall be required.
- F. Reference to Other Agreements and Documents. When the terms of this Certificate of Designations refers to a specific agreement or other document to determine the meaning or operation of a provision hereof, the secretary of the Corporation shall maintain a copy of such agreement or document at the principal executive offices of the Corporation and a copy thereof shall be provided free of charge to any stockholder who makes a request therefor. Unless otherwise provided in this Certificate of Designations, a reference to any specific agreement or other document shall be deemed a reference to such agreement or document as amended from time to time in accordance with the terms of such agreement or document.
- G. Severability. If any term of any series of Series A Preferred Stock is invalid, unlawful, or incapable of being enforced by reason of any rule of law or public policy, all other terms of such series of Series A Preferred Stock as set forth herein which can be given effect without the invalid, unlawful or

unenforceable term will, nevertheless, remain in full force and effect, and no term of any series of Series A Preferred Stock will be deemed dependent upon any other such term unless so expressed in this Certificate of Designations.

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IN WITNESS WHEREOF, this Certificate of Designations is executed on behalf of the Corporation this 25th day of October, 2011.

ARROWHEAD RESEARCH CORPORATION

By: _____

Name: Chris Anzalone

Title: President and Chief Executive Officer

[Signature Page to Certificate of Designations]

NOTICE OF CONVERSION

(To be Executed by the Registered Holder in order to Convert the Series A Preferred Stock)

The undersigned hereby irrevocably elects to convert _____ shares of Series A Preferred Stock (the "Conversion"), represented by stock certificate No(s). (the "Preferred Stock Certificates"), into shares of common stock ("Common Stock") of Arrowhead Research Corporation (the "Corporation") according to the conditions of the Certificate of Designations, Preferences and Rights of Series A Preferred Stock, as of the date written below. If securities are to be issued in the name of a person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto. No fee will be charged to the holder for any conversion, except for transfer taxes, if any. Each Preferred Stock Certificate is attached hereto (or evidence of loss, theft or destruction thereof).

The undersigned acknowledges that these securities are "restricted securities" under the Securities Act of 1933, as amended (the "Act"), and accordingly agrees that all offers and sales by the undersigned of the securities issuable to the undersigned upon conversion of the Series A Preferred Stock have been or will be made only pursuant to an effective registration of the transfer of the Common Stock under the Act, or pursuant to an exemption from registration under the Act.

Date of Conversion: _____

Applicable Conversion Price: _____

Shares of Common Stock Beneficially Owned: _____

Signature

Printed Name

Date: _____

Address: _____

PURCHASE AGREEMENT

PURCHASE AGREEMENT (the "Agreement"), dated as of October 20, 2011, by and between **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation (the "Company"), and **LINCOLN PARK CAPITAL FUND, LLC**, an Illinois limited liability company (the "Investor").

WHEREAS:

Subject to the terms and conditions set forth in this Agreement, the Company has the right to sell to the Investor, and the Investor has the obligation to buy from the Company, up to Fifteen Million Dollars (\$15,000,000) of the Company's common stock, \$.001 par value per share (the "Common Stock"), subject in all cases to the Maximum Share Cap. The shares of Common Stock to be purchased hereunder are referred to herein as the "Purchase Shares."

NOW THEREFORE, the Company and the Investor hereby agree as follows:

1. CERTAIN DEFINITIONS.

For purposes of this Agreement, the following terms shall have the following meanings:

(a) "Available Amount" means initially Fifteen Million Dollars (\$15,000,000) in the aggregate which amount shall be reduced by the Purchase Amount each time the Investor purchases shares of Common Stock pursuant to Section 2 hereof.

(b) "Bankruptcy Law" means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors.

(c) "Business Day" means any day on which the Principal Market is open for trading including any day on which the Principal Market is open for trading for a period of time less than the customary time.

(d) "Closing Sale Price" means, for any security as of any date, the last closing sale price for such security on the Principal Market as reported by the Principal Market, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing sale price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by the Principal Market.

(e) "Confidential Information" means any information disclosed by either party to the other party, either directly or indirectly, in writing, orally or by inspection of tangible objects (including, without limitation, documents, prototypes, samples, plant and equipment), which is designated as "Confidential," "Proprietary" or some similar designation. Information communicated orally shall be considered Confidential Information if such information is confirmed in writing as being Confidential Information within ten (10) Business Days after the initial disclosure. Confidential Information may also include information disclosed to a disclosing party by third parties. Confidential Information shall not, however, include any information which (i) was publicly known and made generally available in the public domain prior to the time of disclosure by the disclosing party; (ii) becomes publicly known and made generally available after disclosure by the disclosing party to the receiving party through no action or inaction of the receiving party; (iii) is already in the possession of the receiving party at the time of disclosure by the disclosing party as shown by the receiving party's files and records immediately prior to

the time of disclosure; (iv) is obtained by the receiving party from a third party without a breach of such third party's obligations of confidentiality; (v) is independently developed by the receiving party without use of or reference to the disclosing party's Confidential Information, as shown by documents and other competent evidence in the receiving party's possession; or (vi) is required by law to be disclosed by the receiving party, provided that the receiving party gives the disclosing party prompt written notice of such requirement prior to such disclosure and assistance in obtaining an order protecting the information from public disclosure.

(f) "Custodian" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

(g) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(h) "Maturity Date" means the date that is 720 Business Days (36 Monthly Periods) from the Commencement Date.

(i) "Monthly Period" means each successive 20 Business Day period commencing with the Commencement Date.

(j) "Person" means an individual or entity including but not limited to any limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof.

(k) "Principal Market" means the Nasdaq Capital Market; provided however, that in the event the Company's Common Stock is ever listed or traded on the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, the NYSE Amex, or the OTC Bulletin Board (it being understood that as used herein "OTC Bulletin Board" shall also mean any successor or comparable market quotation system or exchange to the OTC Bulletin Board such as the OTCQB operated by the OTC Markets Group, Inc.), then the "Principal Market" shall mean such other market or exchange on which the Company's Common Stock is then listed or traded.

(l) "Purchase Amount" means, with respect to any particular purchase made hereunder, the Regular Purchase to be purchased by the Investor pursuant to Section 2 hereof multiplied by the Purchase Price.

(m) "Purchase Date" means with respect to any particular purchase made hereunder, the Business Day on which the Investor receives by 12:00 p.m. eastern time of such Business Day a valid Purchase Notice that the Investor is to buy Purchase Shares pursuant to Section 2 hereof.

(n) "Purchase Price" means the lower of: (A) the lowest Sale Price of the Common Stock on the Purchase Date and (B) the arithmetic average of the three (3) lowest Closing Sale Prices for the Common Stock during the twelve (12) consecutive Business Days ending on the Business Day immediately preceding such Purchase Date (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction).

(o) "Purchase Notice" shall mean a written notice from the Company to the Investor directing the Investor to buy such Purchase Amount in Purchase Shares as specified by the Company therein on the Purchase Date.

(p) "Sale Price" means any sale price for the shares of Common Stock on the Principal Market as reported by the Principal Market.

(q) "SEC" means the United States Securities and Exchange Commission.

(r) "Securities Act" means the Securities Act of 1933, as amended.

(s) "Signing Market Price" means \$0.4207, representing the consolidated closing bid price of the Common Stock on the Nasdaq Stock Market on the date of this Agreement.

(t) "Transfer Agent" means the transfer agent of the Company as set forth in Section 11(f) hereof or such other person who is then serving as the transfer agent for the Company in respect of the Common Stock.

2. PURCHASE OF COMMON STOCK.

Subject to the terms and conditions set forth in this Agreement, the Company has the right to sell to the Investor, and the Investor has the obligation to purchase from the Company, Purchase Shares as follows:

(a) Purchases. Beginning four (4) Business Days following the satisfaction of the conditions (the "Commencement") as set forth in Sections 7 and 8 below (the date of satisfaction of such conditions, the "Commencement Date"), the Company shall have the right but not the obligation on each Business Day during the term of this Agreement to direct the Investor by its delivery to the Investor of a Purchase Notice from time to time to buy up to \$500,000 of common stock (each such purchase a "Regular Purchase" and each such shares "Purchase Shares") at the Purchase Price on the Purchase Date. The Regular Purchase Amount may be increased to up to \$600,000 per Purchase Notice if the Closing Sale Price of the Common Stock is equal to or greater than \$.90 (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) on the Purchase Date. The Regular Purchase Amount may be increased to up to \$800,000 per Purchase Notice if the Closing Sale Price of the Common Stock is equal to or greater than \$1.20 (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) on the Purchase Date. The Regular Purchase Amount may be increased to up to \$1,000,000 per Purchase Notice if the Closing Sale Price of the Common Stock is equal to or greater than \$1.50 (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) on the Purchase Date. Each Regular Purchase is subject in all cases to the Maximum Share Cap. With respect to each such Regular Purchase, the Company must deliver the Purchase Shares before 1:00 p.m. eastern time on the Business Day following the Purchase Date. If on any Purchase Date the Closing Sale Price of the Common Stock is below the Regular Purchase threshold price, such Regular Purchase shall automatically be reduced to the next lowest applicable Regular Purchase Amount. The Company may deliver multiple Regular Purchase Notices to the Investor so long as at least four (4) Business Days have passed since the most recent Regular Purchase was completed.

(b) Payment for Purchase Shares. The Investor shall pay to the Company an amount equal to the Purchase Amount with respect to such Purchase Shares as full payment for such Purchase Shares via wire transfer of immediately available funds on the same Business Day that the Investor receives such Purchase Shares if they are received by the Investor before 1:00 p.m. eastern time or if received by the Investor after 1:00 p.m. eastern time, the next Business Day. The Company shall not issue any fraction of a share of Common Stock upon any purchase. If the issuance would result in the issuance of a fraction of a share of Common Stock, the Company shall round such fraction of a share of Common

Stock up or down to the nearest whole share. All payments made under this Agreement shall be made in lawful money of the United States of America or wire transfer of immediately available funds to such account as the Company may from time to time designate by written notice in accordance with the provisions of this Agreement. Whenever any amount expressed to be due by the terms of this Agreement is due on any day that is not a Business Day, the same shall instead be due on the next succeeding day that is a Business Day.

(c) Compliance with Registration Statement Eligibility Requirements and Rules of Principal Market.

(i) Maximum Share Cap. The Company shall not issue or sell any shares of Common Stock pursuant to this Agreement, and the Investor shall not purchase or acquire any shares of Common Stock pursuant to this Agreement, to the extent that after giving effect thereto, the aggregate number of all shares of Common Stock that would be issued pursuant to this Agreement, together with all shares of Common Stock issued pursuant to any transactions that may be aggregated with the transactions contemplated by this Agreement under applicable rules of The Nasdaq Stock Market or any other Principal Market on which the Common Stock may be listed or quoted, would exceed the lesser of: (A) subject to Section 2(c)(ii) below, the maximum number of shares of Common Stock that the Company may issue pursuant to this Agreement and the transactions contemplated hereby without (1) breaching the Company's obligations under the applicable rules of The Nasdaq Stock Market or any other Principal Market on which the Common Stock may be listed or quoted or (2) obtaining stockholder approval under the applicable rules of The Nasdaq Stock Market or any other Principal Market on which the Common Stock may be listed or quoted (the "Exchange Cap"), unless and until the Company elects to solicit stockholder approval of the transactions contemplated by this Agreement and the stockholders of the Company have in fact approved the transactions contemplated by this Agreement in accordance with the applicable rules and regulations of The Nasdaq Stock Market, any other Principal Market on which the Common Stock may be listed or quoted, and the Certificate of Incorporation and By-laws of the Company; and (B) the maximum number of shares of Common Stock that the Company may issue pursuant to this Agreement and the transactions contemplated hereby without causing the Company to exceed the limitations set forth in General Instruction I.B.6. of Form S-3 and the interpretations of the SEC's staff set forth in response to questions 139.23 and 139.24 of the Compliance and Disclosure Interpretations of Securities Act Sections of the Division of Corporation Finance of the Commission dated March 4, 2011 (the "Registration Statement Eligibility Cap"). For all purposes of this Agreement, the term "Maximum Share Cap" shall mean the lesser of (i) the Exchange Cap, to the extent applicable to the transactions contemplated by this Agreement, and (ii) the Registration Statement Eligibility Cap (it being hereby acknowledged and agreed that the Registration Statement Eligibility Cap shall be applicable for all purposes of this Agreement and the transactions contemplated hereby at all times during the term of this Agreement). For the avoidance of doubt, the Company may, but shall be under no obligation to, request its stockholders to approve the transactions contemplated by this Agreement; provided, that if stockholder approval is not obtained in accordance with this Section 2(c)(i), the Exchange Cap shall be applicable for all purposes of this Agreement and the transactions contemplated hereby at all times during the term of this Agreement (except as set forth in Section 2(c)(ii) below).

(ii) At-Market Transaction. Notwithstanding Section 2(c)(i) above, the Exchange Cap shall not be applicable for any purposes of this Agreement and the transactions contemplated hereby, solely to the extent that (and only for so long as) the Average Price shall equal or exceed the Base Price (it being hereby acknowledged and agreed that the Exchange Cap shall be applicable for all purposes of this Agreement and the transactions contemplated hereby at all other times during the term of this Agreement, unless the stockholder approval referred to in Section 2(c)(i) is obtained). "Average Price" means a price per Purchase Share (rounded to the nearest tenth of a cent) equal to the quotient obtained by

dividing (A) the aggregate gross Purchase Price paid by the Investor for all Purchase Shares purchased pursuant to this Agreement, by (B) the aggregate number of Purchase Shares issued pursuant to this Agreement. "Base Price" means a price per Purchase Share equal to the sum of (A) the Signing Market Price and (B) \$0.042, (subject to adjustment for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction that occurs on or after the date of this Agreement).

(iii) General. The Company shall not issue any shares of Common Stock pursuant to this Agreement if such issuance would reasonably be expected to result in (A) non-compliance with General Instruction I.B.6. of Form S-3 and the interpretations of the SEC's staff set forth in response to questions 139.23 and 139.24 of the Compliance and Disclosure Interpretations of Securities Act Sections of the Division of Corporation Finance of the Commission dated March 4, 2011 or (B) a breach of the rules and regulations of The Nasdaq Stock Market or any other Principal Market on which the Common Stock may be listed or quoted. The provisions of this Section 2(c) shall be implemented in a manner otherwise than in strict conformity with the terms hereof only if necessary to ensure compliance with the rules and regulations of The Nasdaq Stock Market or any other Principal Market on which the Common Stock may be listed or quoted. The parties hereby acknowledge and agree that the Available Amount and the Maximum Share Cap shall not be amended or waived.

(d) Beneficial Ownership Limitation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Investor shall not purchase or acquire, any shares of Common Stock under this Agreement which, when aggregated with all other shares of Common Stock then beneficially owned by the Investor and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in the beneficial ownership by the Investor and its affiliates of more than 9.99% of the then issued and outstanding shares of Common Stock (the "Beneficial Ownership Limitation"). Upon the written or oral request of the Investor, the Company shall confirm orally or in writing to the Investor within two (2) Business Days of such request the number of shares of Common Stock then outstanding. The Investor and the Company shall each cooperate in good faith in the determinations required hereby and the application hereof. For the avoidance of doubt, the limitations set forth in this Section 2(d) shall limit the beneficial ownership by the Investors and its affiliates of Common Stock (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), but, subject to such limitation, shall not otherwise necessarily limit the total number of shares of Common Stock that may be issued and sold hereunder during the term of this Agreement (which total number is subject to the Available Amount and the provisions of Section 2(a), Section 2(c)(1) and Section 2(c)(iii)).

(e) Purchase Price Floor. The Company and the Investor shall not effect any sales and purchases under this Agreement on any Purchase Date where the Purchase Price for any purchases of Purchase Shares would be less than the Floor Price. "Floor Price" means \$0.20, which shall be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction.

3. INVESTOR'S REPRESENTATIONS AND WARRANTIES.

The Investor represents and warrants to the Company that as of the date hereof and as of the Commencement Date:

(a) Investment Purpose. The Investor is acquiring the Commitment Shares and the Purchase Shares (collectively, the "Securities") as principal for its own account and not with a view to or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities law, has no present intention of distributing any of such Securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities in violation of the Securities Act or any applicable state securities law (this representation and warranty not limiting the Investor's right to sell the Securities at any time pursuant to the registration statement described herein or otherwise in compliance with applicable federal and state securities laws and with respect to the Commitment Shares, subject to Section 5(e) hereof). The Investor is acquiring the Securities hereunder in the ordinary course of its business.

(b) Accredited Investor Status. The Investor is an "accredited investor" as that term is defined in Rule 501(a)(3) of Regulation D.

(c) Reliance on Exemptions. The Investor understands that the Securities may be offered and sold to it in reliance on specific exemptions from the registration requirements of United States federal and state securities laws and that the Company is relying in part upon the truth and accuracy of, and the Investor's compliance with, the representations, warranties, agreements, acknowledgments and understandings of the Investor set forth herein in order to determine the availability of such exemptions and the eligibility of the Investor to acquire the Securities.

(d) Information. The Investor understands that its investment in the Securities involves a high degree of risk. The Investor (i) is able to bear the economic risk of an investment in the Securities including a total loss, (ii) has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risks of the proposed investment in the Securities and (iii) has had an opportunity to ask questions of and receive answers from the officers of the Company concerning the financial condition and business of the Company and others matters related to an investment in the Securities. Neither such inquiries nor any other due diligence investigations conducted by the Investor or its representatives shall modify, amend or affect the Investor's right to rely on the Company's representations and warranties contained in Section 4 below. The Investor has sought such accounting, legal and tax advice as it has considered necessary to make an informed investment decision with respect to its acquisition of the Securities.

(e) No Governmental Review. The Investor understands that no United States federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Securities or the fairness or suitability of the investment in the Securities nor have such authorities passed upon or endorsed the merits of the offering of the Securities.

(f) Transfer or Sale. The Investor understands that (i) the Securities may not be offered for sale, sold, assigned or transferred unless (A) registered pursuant to the Securities Act or (B) an exemption exists permitting such Securities to be sold, assigned or transferred without such registration; (ii) any sale of the Securities made in reliance on Rule 144 may be made only in accordance with the terms of Rule 144 and further, if Rule 144 is not applicable, any resale of the Securities under circumstances in which the seller (or the person through whom the sale is made) may be deemed to be an underwriter (as that

term is defined in the Securities Act) may require compliance with some other exemption under the Securities Act or the rules and regulations of the SEC thereunder.

(g) Validity; Enforcement. This Agreement has been duly and validly authorized, executed and delivered on behalf of the Investor and is a valid and binding agreement of the Investor enforceable against the Investor in accordance with its terms, subject as to enforceability to general principles of equity and to applicable bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws relating to, or affecting generally, the enforcement of applicable creditors' rights and remedies.

(h) Residency. The Investor is a resident of the State of Illinois.

(i) No Prior Short Selling. The Investor represents and warrants to the Company that at no time prior to the date of this Agreement has any of the Investor, its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) "short sale" (including any "short sale exempt") (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which establishes a net short position with respect to the Common Stock.

4. REPRESENTATIONS AND WARRANTIES OF THE COMPANY.

The Company represents and warrants to the Investor that as of the date hereof and as of the Commencement Date (except as set forth in the SEC Documents which are incorporated) by reference herein:

(a) Organization and Qualification. The Company and each of the Subsidiaries (which for purposes of this Agreement means any entity in which the Company, directly or indirectly, owns 50% or more of the voting stock or capital stock or other similar equity interests) is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, prospects or condition (financial or otherwise) of the Company and the Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii) or (iii), a "Material Adverse Effect") and no Proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification. The Company has no Subsidiaries except as set forth on Schedule 4(a).

(b) Authorization; Enforcement; Validity. (i) The Company has the requisite corporate power and authority to enter into and perform its obligations under this Agreement, the Registration Rights Agreement and each of the other agreements entered into by the parties on the Commencement Date and attached hereto as exhibits to this Agreement (collectively, the "Transaction Documents"), and to issue the Securities in accordance with the terms hereof and thereof, (ii) the execution and delivery of

the Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby, including without limitation, the issuance of the Commitment Shares and the reservation for issuance and the issuance of the Purchase Shares issuable under this Agreement, have been duly authorized by the Company's Board of Directors and no further consent or authorization is required by the Company, its Board of Directors or its stockholders, (iii) this Agreement has been, and each other Transaction Document shall be on the Commencement Date, duly executed and delivered by the Company and (iv) this Agreement constitutes, and each other Transaction Document upon its execution on behalf of the Company, shall constitute, the valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of creditors' rights and remedies. The Board of Directors of the Company has approved the resolutions (the "Signing Resolutions") substantially in the form as set forth as Exhibit C attached hereto to authorize this Agreement and the transactions contemplated hereby. The Signing Resolutions are valid, in full force and effect and have not been modified or supplemented in any respect. No other approvals or consents of the Company's Board of Directors and/or stockholders is necessary under applicable laws and the Company's Certificate of Incorporation and/or Bylaws to authorize the execution and delivery of this Agreement or any of the transactions contemplated hereby, including, but not limited to, the issuance of the Commitment Shares and the issuance of the Purchase Shares.

(c) Capitalization. As of the date hereof, the authorized capital stock of the Company is set forth on Schedule 4(c). Except as disclosed in Schedule 4(c), (i) no shares of the Company's capital stock are subject to preemptive rights or any other similar rights or any liens or encumbrances suffered or permitted by the Company, (ii) there are no outstanding debt securities, (iii) there are no outstanding options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, or contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to issue additional shares of capital stock of the Company or any of its Subsidiaries or options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, (iv) there are no agreements or arrangements under which the Company or any of its Subsidiaries is obligated to register the sale of any of their securities under the Securities Act (except the Registration Rights Agreement), (v) there are no outstanding securities or instruments of the Company or any of its Subsidiaries which contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to redeem a security of the Company or any of its Subsidiaries, (vi) there are no securities or instruments containing anti-dilution or similar provisions that will be triggered by the issuance of the Securities as described in this Agreement and (vii) the Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. The Company has furnished or made available to the Investor true and correct copies of the Company's Certificate of Incorporation, as amended and as in effect on the date hereof (the "Certificate of Incorporation"), and the Company's By-laws, as amended and as in effect on the date hereof (the "By-laws"), and summaries of the terms of all securities convertible into or exercisable for Common Stock, if any, and copies of any documents containing the material rights of the holders thereof in respect thereto.

(d) Issuance of Securities. Upon issuance and payment therefor in accordance with the terms and conditions of this Agreement, the Purchase Shares shall be validly issued, fully paid and nonassessable and free from all taxes, liens and charges with respect to the issue thereof, with the holders being entitled to all rights accorded to a holder of Common Stock. The Commitment Shares have been

duly authorized and, upon issuance in accordance with the terms hereof, the Commitment Shares shall be (i) validly issued, fully paid and non-assessable and (ii) free from all taxes, liens and charges with respect to the issue thereof. 1,000,000 shares of Common Stock have been duly authorized and reserved for issuance upon purchase under this Agreement as Purchase Shares and an additional 49,000,000 shares of Common Stock (pre-split) will be authorized and reserved for issuance pursuant to this Agreement and Purchase Shares following the Company's implementation of a reverse stock split, which will reduce the issued and outstanding Common Stock but will not affect the total number of shares of Common Stock authorized for issuance (the "Reverse Stock Split"). 886,189 shares of Common Stock (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) have been duly authorized and reserved for issuance as Additional Commitment Shares in accordance with this Agreement. The Reverse Stock Split has been authorized by the Company's stockholders at a meeting held on August 8, 2011 and may be implemented at the discretion of the Board of Directors at any time through August 8, 2012 at a range between 1-for-2 and 1-for-15

(e) No Conflicts. Except as disclosed in Schedule 4(e), the execution, delivery and performance of the Transaction Documents by the Company and the consummation by the Company of the transactions contemplated hereby and thereby (including, without limitation, the reservation for issuance and issuance of the Purchase Shares and Additional Commitment Shares) will not (i) result in a violation of the Certificate of Incorporation, any Certificate of Designations, Preferences and Rights of any outstanding series of preferred stock of the Company or the By-laws or (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which the Company or any of its Subsidiaries is a party, or result in a violation of any law, rule, regulation, order, judgment or decree (including federal and state securities laws and regulations and the rules and regulations of the Principal Market applicable to the Company or any of its Subsidiaries) or by which any property or asset of the Company or any of its Subsidiaries is bound or affected, except in the case of conflicts, defaults, terminations, amendments, accelerations, cancellations and violations under clause (ii), which could not reasonably be expected to result in a Material Adverse Effect. Except as disclosed in Schedule 4(e), neither the Company nor its Subsidiaries is in violation of any term of or in default under its Certificate of Incorporation, any Certificate of Designation, Preferences and Rights of any outstanding series of preferred stock of the Company or By-laws or their organizational charter or by-laws, respectively. Except as disclosed in Schedule 4(e), neither the Company nor any of its Subsidiaries is in violation of any term of or is in default under any material contract, agreement, mortgage, indebtedness, indenture, instrument, judgment, decree or order or any statute, rule or regulation applicable to the Company or its Subsidiaries, except for possible conflicts, defaults, terminations or amendments which could not reasonably be expected to have a Material Adverse Effect. The business of the Company and its Subsidiaries is not being conducted, and shall not be conducted, in violation of any law, ordinance, regulation of any governmental entity, except for possible violations, the sanctions for which either individually or in the aggregate could not reasonably be expected to have a Material Adverse Effect. Except as specifically contemplated by this Agreement and as required under the Securities Act or applicable state securities laws, the Company is not required to obtain any consent, authorization or order of, or make any filing or registration with, any court or governmental agency or any regulatory or self-regulatory agency in order for it to execute, deliver or perform any of its obligations under or contemplated by the Transaction Documents in accordance with the terms hereof or thereof. Except as disclosed in Schedule 4(e), all consents, authorizations, orders, filings and registrations which the Company is required to obtain pursuant to the preceding sentence shall be obtained or effected on or prior to the Commencement Date. Except as listed in Schedule 4(e), since one year prior to the date hereof, the Company has not received nor delivered any notices or correspondence from or to the Principal Market relating to the non-compliance with exchange listing standards or rules. The Principal Market has not commenced any delisting proceedings against the Company.

(f) SEC Documents; Financial Statements. Except as disclosed in Schedule 4(f), the Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the two years preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the “SEC Documents”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Documents prior to the expiration of any such extension. As of their respective dates, the SEC Documents complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Documents, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Documents comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved (“GAAP”), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. Except as listed in Schedule 4(f), the Company has received no notices or correspondence from the SEC for the one year preceding the date hereof. The SEC has not commenced any enforcement proceedings against the Company or any of its subsidiaries.

(g) Absence of Certain Changes. Except as disclosed in Schedule 4(g), since the filing of the Company’s Form 10-Q for the period ending June 30, 2011, there has been no material adverse change in the business, properties, operations, financial condition or results of operations of the Company or its Subsidiaries. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any Bankruptcy Law nor does the Company or any of its Subsidiaries have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy or insolvency proceedings. The Company is financially solvent and is generally able to pay its debts as they become due.

(h) Absence of Litigation. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the knowledge of the Company or any of its Subsidiaries, threatened against or affecting the Company, the Common Stock or any of the Company’s Subsidiaries or any of the Company’s or the Company’s Subsidiaries’ officers or directors in their capacities as such, which could reasonably be expected to have a Material Adverse Effect. A description of each action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body which, as of the date of this Agreement, is pending or threatened in writing against or affecting the Company, the Common Stock or any of the Company’s Subsidiaries or any of the Company’s or the Company’s Subsidiaries’ officers or directors in their capacities as such, is set forth in Schedule 4(h).

(i) Acknowledgment Regarding Investor’s Status. The Company acknowledges and agrees that the Investor is acting solely in the capacity of arm’s length purchaser with respect to the Transaction Documents and the transactions contemplated hereby and thereby. The Company further acknowledges that the Investor is not acting as a financial advisor or fiduciary of the Company (or in any similar

capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby and any advice given by the Investor or any of its representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Investor's purchase of the Securities. The Company further represents to the Investor that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives and advisors.

(j) No General Solicitation. Neither the Company, nor any of its affiliates, nor any person acting on its or their behalf, has engaged in any form of general solicitation or general advertising (within the meaning of Regulation D under the Securities Act) in connection with the offer or sale of the Securities.

(k) Intellectual Property Rights. The Company and its Subsidiaries own or possess adequate rights or licenses to use all material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and rights necessary to conduct their respective businesses as now conducted. Except as set forth on Schedule 4(k), none of the Company's material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, government authorizations, trade secrets or other intellectual property rights have expired or terminated, or, by the terms and conditions thereof, could expire or terminate within two years from the date of this Agreement. The Company and its Subsidiaries do not have any knowledge of any infringement by the Company or its Subsidiaries of any material trademark, trade name rights, patents, patent rights, copyrights, inventions, licenses, service names, service marks, service mark registrations, trade secret or other similar rights of others, or of any such development of similar or identical trade secrets or technical information by others and, except as set forth on Schedule 4(k), there is no claim, action or proceeding being made or brought against, or to the Company's knowledge, being threatened against, the Company or its Subsidiaries regarding trademark, trade name, patents, patent rights, invention, copyright, license, service names, service marks, service mark registrations, trade secret or other infringement, which could reasonably be expected to have a Material Adverse Effect.

(l) Environmental Laws. The Company and its Subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("Environmental Laws"), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval, except where, in each of the three foregoing clauses, the failure to so comply could not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

(m) Title. The Company and the Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and the Subsidiaries, in each case free and clear of all liens, encumbrances and defects ("Liens"), except for Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries, and Liens for the payment of federal, state or other taxes, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Subsidiaries are in compliance with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries. Any real property and facilities held under lease by the Company and

any of its Subsidiaries are held by them under valid, subsisting and enforceable leases with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries.

(n) Insurance. The Company and each of its Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as management of the Company believes to be prudent and customary in the businesses in which the Company and its Subsidiaries are engaged. Neither the Company nor any such Subsidiary has been refused any insurance coverage sought or applied for and neither the Company nor any such Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not materially and adversely affect the condition, financial or otherwise, or the earnings, business or operations of the Company and its Subsidiaries, taken as a whole.

(o) Regulatory Permits. The Company and its Subsidiaries possess all material certificates, authorizations and permits issued by the appropriate federal, state or foreign regulatory authorities necessary to conduct their respective businesses, and neither the Company nor any such Subsidiary has received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit.

(p) Tax Status. The Company and each of its Subsidiaries has made or filed all federal and state income and all other material tax returns, reports and declarations required by any jurisdiction to which it is subject (unless and only to the extent that the Company and each of its Subsidiaries has set aside on its books provisions reasonably adequate for the payment of all unpaid and unreported taxes) and has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith and has set aside on its books provision reasonably adequate for the payment of all taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company know of no basis for any such claim.

(q) Transactions With Affiliates. Except as set forth in the SEC Documents, none of the officers or directors of the Company and, to the knowledge of the Company, none of the employees of the Company is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(r) Application of Takeover Protections. The Company and its board of directors have taken or will take prior to the Commencement Date all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Certificate of Incorporation or the laws of the state of its incorporation which is or could become applicable to the Investor as a result of the transactions contemplated by this Agreement, including, without limitation, the Company's issuance of

the Securities and the Commitment Shares and the Investor's ownership of the Securities and the Commitment Shares.

(s) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents and with respect to information provided in any Offering Notice, the Company confirms that as of the Commencement Date neither it nor any other Person acting on its behalf has provided the Investor or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Registration Statement or prospectus supplements thereto or otherwise made publicly available. The Company understands and confirms that the Investor will rely on the foregoing representation in effecting purchases and sales of securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Investor regarding the Company, its business and the transactions contemplated hereby, including the disclosure schedules to this Agreement, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The press releases disseminated by the Company during the twelve months preceding the date of this Agreement taken as a whole do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not misleading. The Company acknowledges and agrees that the Investor neither makes nor has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

(t) Foreign Corrupt Practices. Neither the Company, nor to the knowledge of the Company, any agent or other person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

5. COVENANTS.

(a) Filing of Form 8-K and Registration Statement. The Company agrees that it shall, within the time required under the Exchange Act file a Report on Form 8-K disclosing this Agreement and the transaction contemplated hereby. The Company shall also file within twenty (20) Business Days from the date hereof a new registration statement ("Registration Statement") covering only the resale of the Purchase Shares and the Commitment Shares, in accordance with the terms of the Registration Rights Agreement between the Company and the Investor, dated as of the date hereof ("Registration Rights Agreement"). Any securities issuable under this Agreement that have not been registered under the Securities Act shall bear the following restrictive legend (the "Restrictive Legend"), which such Restrictive Legend may be removed in accordance with applicable Securities Act rules and regulations upon delivery of a reasonably acceptable opinion from counsel to the Investor:

THE SECURITIES REPRESENTED BY THIS INSTRUMENT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY STATE SECURITIES

LAW, AND NO SALE, ASSIGNMENT, PLEDGE, HYPOTHECATION, GIFT, TRANSFER OR OTHER DISPOSITION OR OFFER TO DO ANY OF THE FOREGOING MAY BE MADE UNLESS A REGISTRATION STATEMENT UNDER THE SECURITIES ACT AND OTHER APPLICABLE SECURITIES LAWS WITH RESPECT TO SUCH SECURITIES IS THEN IN EFFECT, OR IN THE OPINION OF COUNSEL, ACCEPTABLE TO THE ISSUER, SUCH REGISTRATION UNDER THE SECURITIES ACT AND OTHER APPLICABLE SECURITIES LAWS IS NOT REQUIRED.

(b) Blue Sky. The Company has taken all such action, if any, as is reasonably necessary in order to obtain an exemption for or to qualify (i) the initial issuance of the Initial Commitment Shares to the Investor under this Agreement and (ii) any subsequent resale of the Initial Commitment Shares by the Investor, in each case, under applicable securities or "Blue Sky" laws of the states of the United States in such states as reasonably requested by the Investor, and has provided evidence of any such action so taken to the Investor, and the Company shall continue to use its best efforts to maintain in effect such exemption or qualification, as applicable. The Company shall use its best efforts to take such action, if any, as is reasonably necessary in order to obtain an exemption for or to qualify (x) the initial issuance or sale of any Additional Commitment Shares and any Purchase Shares to the Investor under this Agreement and (y) any subsequent resale of any Additional Commitment Shares and any Purchase Shares by the Investor, in each case, under applicable securities or "Blue Sky" laws of the states of the United States in such states as is reasonably requested by the Investor from time to time, and shall provide evidence of any such action so taken to the Investor, and the Company shall continue to use its best efforts to maintain in effect such exemption or qualification, as applicable.

(c) Listing. The Company shall promptly secure the listing of all of the Purchase Shares and Commitment Shares upon each national securities exchange and automated quotation system, if any, upon which shares of Common Stock are then listed (subject to official notice of issuance) and shall maintain, so long as any other shares of Common Stock shall be so listed, such listing of all such securities from time to time issuable under the terms of the Transaction Documents. The Company shall maintain the Common Stock's authorization for quotation on the Principal Market. The Company shall promptly, and in no event later than the following Business Day, provide to the Investor copies of any notices it receives from the Principal Market regarding the continued eligibility of the Common Stock for listing on such automated quotation system or securities exchange. The Company shall pay all fees and expenses in connection with satisfying its obligations under this Section.

(d) Limitation on Short Sales and Hedging Transactions. The Investor agrees that beginning on the date of this Agreement and ending on the date of termination of this Agreement as provided in Section 11, the Investor and its agents, representatives and affiliates shall not in any manner whatsoever enter into or effect, directly or indirectly, any (i) "short sale" (including any "short sale exempt") (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, that establishes a net short position with respect to the Common Stock.

(e) Issuance of Commitment Shares. On or before October 20, 2011, the Company shall pay to the Investor, as consideration for the Investor entering into this Agreement, a commitment fee of \$269,500 (the "Initial Commitment Fee"). The Company may pay the Initial Commitment Fee in cash, or in lieu of a cash payment, issue to the Investor 689,258 shares of Common Stock (the "Initial Commitment Shares") valued at \$0.391 per share and shall deliver to the Transfer Agent a letter in the form as set forth as Exhibit E attached hereto with respect to the issuance of the Initial Commitment Shares. In connection with each purchase of Purchase Shares hereunder, the Company agrees to issue to the Investor a number of shares of Common Stock (the "Additional Commitment Shares") and together

with the Initial Commitment Shares, the “Commitment Shares”) equal to the product of (x) 886,189 and (y) the Purchase Amount Fraction. The “Purchase Amount Fraction” shall mean a fraction, the numerator of which is the Purchase Amount purchased by the Investor with respect to such purchase of Purchase Shares and the denominator of which is Fifteen Million Dollars (\$15,000,000). The Additional Commitment Shares shall be equitably adjusted for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction. The Initial Commitment Shares shall be issued in certificated form and shall bear the Restrictive Legend. The Investor agrees that the Investor shall not pledge, transfer or sell the Commitment Shares until the earlier of (a) 720 Business Days (36 Monthly Periods) from the date hereof or (b) the date on which this Agreement has been terminated, provided, however, that such restrictions shall not apply: (i) if an Event of Default has occurred, or any event which, after notice and/or lapse of time, would become an Event of Default, including any failure by the Company to timely issue Purchase Shares under this Agreement, or (iii) in the event that the Registration Statement is not declared effective by the SEC within 180 days from the date hereof. Notwithstanding the forgoing, the Investor may transfer Commitment Shares to a third party in order to settle a sale made by the Investor where the Investor reasonably expects the Company to deliver additional Purchase Shares to the Investor under this Agreement so long as the Investor maintains ownership of the amount of Commitment Shares received up to that point by “replacing” such Commitment Shares so transferred with new Purchase Shares when the new Purchase Shares are actually issued by the Company to the Investor.

(f) Due Diligence. The Investor shall have the right, from time to time as the Investor may reasonably deem appropriate, to perform reasonable due diligence on the Company during normal business hours at any time prior to the Commencement. The Company and its officers and employees shall provide information and reasonably cooperate with the Investor in connection with any reasonable request by the Investor related to the Investor’s due diligence of the Company. Each party hereto agrees not to disclose any Confidential Information of the other party to any third party and shall not use the Confidential Information for any purpose other than in connection with, or in furtherance of, the transactions contemplated hereby. Each party hereto acknowledges that the Confidential Information shall remain the property of the disclosing party and agrees that it shall take all reasonable measures to protect the secrecy of any Confidential Information disclosed by the other party. Except with respect to information provided in any Offering Notice, the Company confirms that neither it nor any other Person acting on its behalf shall provide the Investor or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Registration Statement or prospectus supplements thereto or otherwise publicly disclosed.

(g) Purchase Records. The Investor and the Company shall each maintain records showing the remaining Available Amount at any given time and the dates and Purchase Amounts for each purchase or shall use such other method, reasonably satisfactory to the Investor and the Company.

(h) Taxes. The Company shall pay any and all transfer, stamp or similar taxes that may be payable with respect to the issuance and delivery of any shares of Common Stock to the Investor made under this Agreement.

(i) No Variable Rate Transactions. From the date hereof until the date that is twelve (12) months from the date hereof, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents for cash consideration (or a combination of units thereof) involving a Variable Rate Transaction other than in connection with an Exempt Issuance. “Variable Rate Transaction” means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is

based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock (excluding customary anti-dilution provisions) or (ii) enters into any agreement, including, but not limited to, an equity line of credit or at the market offering, whereby the Company may sell securities at a future determined price. “Exempt Issuance” means the issuance of (a) shares of Common Stock or options to employees, officers, directors or vendors of the Company pursuant to any stock or option plan duly adopted for such purpose, by the Board of Directors or a majority of the members of a committee of directors established for such purpose, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than pursuant to anti-dilution adjustments contained in such securities as of the date of this Agreement), and (c) securities issued pursuant to acquisitions or strategic transactions approved by the directors of the Company, which acquisitions or strategic transactions can have a Variable Rate Transaction component, provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, is either, (i) an operating company or an asset in a business synergistic with the business of the Company (a “Strategic Entity”), or (ii) a Person who is a stockholder of a Strategic Entity and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities. The Company agrees that, from the date hereof until the date that is twelve (12) months from the date hereof, prior to entering into each and any definitive agreement for the sale directly or indirectly of any debt, Common Stock or Common Stock Equivalents for cash, but excluding any Exempt Issuance, a (“Subsequent Transaction”), the Company shall to the extent permitted under the Securities Act and without requiring the Company to file any prospectus (whether preliminary or final) or free writing prospectus, provide notice to the Investor (“Offering Notice”) not less than three (3) Business Days nor more than five (5) Business Days prior to entering into any such Subsequent Transaction, including the relevant terms and conditions of such Subsequent Transaction, and the Investor shall, to the extent permitted under the Securities Act, have the right to participate on equivalent terms and conditions in up to 10% of such Subsequent Transaction (the “Right of Participation”) by delivering notice to the Company not later than one (1) Business Days after receipt of the Offering Notice, which notice from Investor shall indicate Investor’s intention to participate in the Subsequent Transaction and the amount of its participation. In the event that the Investor does not provide notice within the two (2) day period and the Company does not enter into such Subsequent Transaction within ten (10) Business Days from the Offering Notice, the Company shall again be required to provide an Offering Notice as set forth herein. The Company shall deliver an Offering Notice for each and any Subsequent Transaction and agrees that it shall not execute any definitive documentation for any Subsequent Transaction whatsoever, unless it has first complied with this Section 5(i). Notwithstanding anything to the contrary in this Section 5(i) and unless otherwise agreed to by Investor, the Company shall either confirm in writing to Investor that the transaction with respect to the Subsequent Transaction has been abandoned or shall publicly disclose its intention to enter into the Subsequent Transaction, in either case in such a manner such that Investor will not be in possession of any material, non-public information, by the tenth (10th) Business Day following delivery of the Offering Notice. If by such tenth (10th) Business Day, no public disclosure regarding a transaction with respect to the Subsequent Transaction has been made, and no notice regarding the abandonment of such transaction has been received by Investor, such transaction shall be deemed to have been abandoned and Investor shall not be in possession of any material, non-public information with respect to the Company or any of its Subsidiaries. Should the Company decide to

pursue such transaction with respect to the Subsequent Transaction, the Company shall provide Investor with another Offering Notice in accordance with, and subject to, the terms of this Section 5(i) and Investor will again have the right of participation set forth in this Section 5(i).

6. TRANSFER AGENT INSTRUCTIONS.

On the Commencement Date, the Company shall cause any restrictive legend on the Initial Commitment Shares to be removed and all of the Purchase Shares and Additional Commitment Shares, to be issued under this Agreement shall be issued without any restrictive legend unless the Investor expressly consents otherwise. The Company shall issue irrevocable instructions to the Transfer Agent, and any subsequent transfer agent, to issue Additional Commitment Shares and Purchase Shares in the name of the Investor in the form agreed to by the parties prior to the Commencement Date (the “Irrevocable Transfer Agent Instructions”) (and for each Regular Purchase to be valid the Transfer Agent must receive such executed instructions from the Company). The Company warrants to the Investor that no instruction other than the Irrevocable Transfer Agent Instructions referred to in this Section 6, will be given by the Company to the Transfer Agent with respect to the Purchase Shares and the Additional Commitment Shares, and that Commitment Shares and the Purchase Shares shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement. The Investor acknowledges that the Company’s undertakings pursuant to this Section 6 are made in reliance on the Investor’s representations set forth in Section 3 of this Agreement.

7. CONDITIONS TO THE COMPANY’S RIGHT TO COMMENCE SALES OF SHARES OF COMMON STOCK.

The right of the Company hereunder to commence sales of the Purchase Shares is subject to the satisfaction of each of the following conditions:

(a) The Investor shall have executed each of the Transaction Documents and delivered the same to the Company; and

(b) A registration statement covering the resale by the Investor of all of the Commitment Shares and Purchase Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC.

8. CONDITIONS TO THE INVESTOR’S OBLIGATION TO PURCHASE SHARES OF COMMON STOCK.

The obligation of the Investor to buy Purchase Shares under this Agreement is subject to the satisfaction of each of the following conditions and once such conditions have been initially satisfied, there shall not be any ongoing obligation to satisfy such conditions after the Commencement has occurred:

(a) The Company shall have executed each of the Transaction Documents and delivered the same to the Investor;

(b) The Company shall have issued to the Investor the Initial Commitment Shares without restrictive legend;

(c) The Common Stock shall be authorized for quotation on the Principal Market, trading in the Common Stock shall not have been within the last 365 days suspended by the SEC or the Principal Market and the Purchase Shares and the Commitment Shares shall be approved for listing upon the Principal Market;

(d) The Investor shall have received the opinions of the Company's legal counsel dated as of the Commencement Date substantially in the form of **Exhibit A** attached hereto;

(e) The representations and warranties of the Company shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 above, in which case, such representations and warranties shall be true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date) and the Company shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date and the Company shall have provided the Buyer a written notice that the Company has not disclosed any material non-public information to the Buyer that has not otherwise been publicly disclosed in accordance with applicable securities laws. The Investor shall have received a certificate, executed by the CEO, President or CFO of the Company, dated as of the Commencement Date, to the foregoing effect in the form attached hereto as **Exhibit B**;

(f) The Board of Directors of the Company shall have adopted resolutions in the form attached hereto as **Exhibit C** which shall be in full force and effect without any amendment or supplement thereto as of the Commencement Date;

(g) As of the Commencement Date, the Company shall have reserved out of its authorized and unissued Common Stock, (A) solely for the purpose of effecting purchases of Purchase Shares hereunder, a number of shares equal to the Purchase Shares to be purchase hereunder and (B) as Additional Commitment Shares in accordance with Section 5(e) hereof, 886,189 shares of Common Stock;

(h) The Irrevocable Transfer Agent Instructions, in form acceptable to the parties shall have been delivered to and acknowledged in writing by the Company and the Company's Transfer Agent;

(i) The Company shall have delivered to the Investor a certificate evidencing the incorporation and good standing of the Company in the State of Delaware issued by the Secretary of State of the State of Delaware as of a date within ten (10) Business Days of the Commencement Date;

(j) The Company shall have delivered to the Investor a certified copy of the Certificate of Incorporation as certified by the Secretary of State of the State of Delaware within ten (10) Business Days of the Commencement Date;

(k) The Company shall have delivered to the Investor a secretary's certificate executed by the Secretary of the Company, dated as of the Commencement Date, in the form attached hereto as **Exhibit D**;

(l) A registration statement covering the resale by the Investor of all of the Purchase Shares and the Commitment Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC. The

Company shall have prepared and delivered to the Investor a final and complete form of prospectus, dated and current as of the Commencement Date, to be used by the Investor in connection with any sales of the Commitment Shares and any Purchase Shares by the Investor, and to be filed by the Company one (1) Business Day after the Commencement Date. The Company shall have made all filings under all applicable federal and state securities or "Blue Sky" laws necessary to consummate the issuance of the Commitment Shares and the Purchase Shares pursuant to this Agreement in compliance with such laws;

(m) No Event of Default has occurred, or any event which, after notice and/or lapse of time, would become an Event of Default has occurred;

(n) On or prior to the Commencement Date, the Company shall take all necessary action, if any, and such actions as reasonably requested by the Investor, in order to render inapplicable any control share acquisition, business combination, stockholder rights plan or poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Certificate of Incorporation or the laws of the state of its incorporation which is or could become applicable to the Investor as a result of the transactions contemplated by this Agreement, including, without limitation, the Company's issuance of the Commitment Shares and the Purchase Shares and the Investor's ownership of such securities; and

(o) The Company shall have provided the Investor with the information requested by the Investor in connection with its due diligence requests made prior to, or in connection with, the Commencement, in accordance with the terms of Section 5(f) hereof.

9. INDEMNIFICATION.

In consideration of the Investor's execution and delivery of the Transaction Documents and acquiring the Securities hereunder and in addition to all of the Company's other obligations under the Transaction Documents, the Company shall defend, protect, indemnify and hold harmless the Investor and all of its affiliates, stockholders, officers, directors, employees and direct or indirect investors and any of the foregoing person's agents or other representatives (including, without limitation, those retained in connection with the transactions contemplated by this Agreement) (collectively, the "Indemnitees") from and against any and all actions, causes of action, suits, claims, losses, costs, penalties, fees, liabilities and damages, and expenses in connection therewith (irrespective of whether any such Indemnitee is a party to the action for which indemnification hereunder is sought), and including reasonable attorneys' fees and disbursements (the "Indemnified Liabilities"), incurred by any Indemnitee as a result of, or arising out of, or relating to (a) any misrepresentation or breach of any representation or warranty made by the Company in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (b) any breach of any covenant, agreement or obligation of the Company contained in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, or (c) any cause of action, suit or claim brought or made against such Indemnitee and arising out of or resulting from the execution, delivery, performance or enforcement of the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, other than with respect to Indemnified Liabilities which result from the gross negligence or willful misconduct of the Indemnitee. To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Indemnified Liabilities which is permissible under applicable law. Payment under this indemnification shall be made within thirty (30) days from the date Investor makes written request for it.

10. EVENTS OF DEFAULT.

An “Event of Default” shall be deemed to have occurred at any time as any of the following events occurs:

(a) the effectiveness of a registration statement registering any of the Commitment Shares or the Purchase Shares lapses for any reason (including, without limitation, the issuance of a stop order) or is unavailable to the Investor for the resale of any or all of the Commitment Shares or the Purchase Shares, and such lapse or unavailability continues for a period of ten (10) consecutive Business Days or for more than an aggregate of thirty (30) Business Days in any 365-day period;

(b) the suspension from trading or failure of the Common Stock to be listed on the Principal Market for a period of three (3) consecutive Business Days;

(c) the delisting of the Company’s Common Stock from the Principal Market, provided, however, that the Common Stock is not immediately thereafter trading on the New York Stock Exchange, the Nasdaq Capital Market, the Nasdaq Global Select Market, the OTC Bulletin Board (or nationally recognized successor thereto), or the NYSE Amex;

(d) the failure for any reason by the Transfer Agent to issue Purchase Shares or Additional Commitment Shares to the Investor within five (5) Business Days after the applicable Purchase Date which the Investor is entitled to receive;

(e) the Company breaches any representation, warranty, covenant or other term or condition under any Transaction Document if such breach could reasonably be expected to have a Material Adverse Effect and except, in the case of a breach of a covenant which is reasonably curable, only if such breach continues for a period of at least five (5) Business Days;

(f) if any Person commences a proceeding against the Company pursuant to or within the meaning of any Bankruptcy Law;

(g) if the Company pursuant to or within the meaning of any Bankruptcy Law; (A) commences a voluntary case, (B) consents to the entry of an order for relief against it in an involuntary case, (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, (D) makes a general assignment for the benefit of its creditors or is generally unable to pay its debts as the same become due;

(h) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that (A) is for relief against the Company in an involuntary case, (B) appoints a Custodian of the Company or for all or substantially all of its property, or (C) orders the liquidation of the Company or any Subsidiary; or

(i) if at any time after the Commencement Date, the Exchange Cap is reached (to the extent such Exchange Cap is applicable pursuant to Section 2(c) hereof).

In addition to any other rights and remedies under applicable law and this Agreement, including the Investor termination rights under Section 11 hereof, so long as an Event of Default has occurred and is continuing, or if any event which, after notice and/or lapse of time, would become an Event of Default, has occurred and is continuing, the Investor shall not be permitted or obligated to purchase any shares of Common Stock under this Agreement. If pursuant to or within the meaning of any Bankruptcy Law, the

Company commences a voluntary case or any Person commences a proceeding against the Company, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors, (any of which would be an Event of Default as described in Sections 10(f), 10(g) and 10(h) hereof) this Agreement shall automatically terminate without any liability or payment to the Company without further action or notice by any Person. No such termination of this Agreement under Section 11(a) or 11(d) shall affect the Company's or the Investor's obligations under this Agreement with respect to pending purchases and the Company and the Investor shall complete their respective obligations with respect to any pending purchases under this Agreement.

11. TERMINATION

This Agreement may be terminated only as follows:

(a) If pursuant to or within the meaning of any Bankruptcy Law, the Company commences a voluntary case or any Person commences a proceeding against the Company, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors, (any of which would be an Event of Default as described in Sections 10(f), 10(g) and 10(h) hereof) this Agreement shall automatically terminate without any liability or payment to the Company without further action or notice by any Person. No such termination of this Agreement under this Section 11(a) shall affect the Company's or the Investor's obligations under this Agreement with respect to pending purchases and the Company and the Investor shall complete their respective obligations with respect to any pending purchases under this Agreement.

(b) In the event that the Commencement shall not have occurred, the Company shall have the option to terminate this Agreement for any reason or for no reason without any liability whatsoever of any party to any other party under this Agreement.

(c) In the event that the Commencement shall not have occurred within 180 days from the date of this Agreement, due to the failure to satisfy the conditions set forth in Sections 7 and 8 above with respect to the Commencement, the non-breaching party shall have the option to terminate this Agreement at the close of business on such date or thereafter without liability of any party to any other party.

(d) At any time after the Commencement Date, the Company shall have the option to terminate this Agreement for any reason or for no reason by delivering notice (a "Company Termination Notice") to the Investor electing to terminate this Agreement without any liability whatsoever of any party to any other party under this Agreement. The Company Termination Notice shall not be effective until one (1) Business Day after it has been received by the Investor. No such termination of this Agreement under this Section 11(d) shall affect the Company's or the Investor's obligations under this Agreement with respect to pending purchases and the Company and the Investor shall complete their respective obligations with respect to any pending purchases under this Agreement.

(e) This Agreement shall automatically terminate on the date that the Company sells and the Investor purchases the full Available Amount as provided herein, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

(f) If by the Maturity Date for any reason or for no reason the full Available Amount under this Agreement has not been purchased as provided for in Section 2 of this Agreement, this Agreement shall automatically terminate on the Maturity Date, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

Except as set forth in Sections 11(a) (in respect of an Event of Default under Sections 10(f), 10(g) and 10(h)), 11(c) and 11(f), any termination of this Agreement pursuant to this Section 11 shall be effected by written notice from the Company to the Investor, or the Investor to the Company, as the case may be, setting forth the basis for the termination hereof. The representations and warranties and covenants of the Company and the Investor contained in Sections 3, 4, 5, and 6 hereof, the indemnification provisions set forth in Section 9 hereof and the agreements and covenants set forth in Sections 10, 11 and 12 shall survive the Commencement and any termination of this Agreement. No termination of this Agreement shall affect the Company's or the Investor's rights or obligations (i) under the Registration Rights Agreement which shall survive any such termination or (ii) under this Agreement with respect to pending purchases and the Company and the Investor shall complete their respective obligations with respect to any pending purchases under this Agreement.

12. MISCELLANEOUS.

(a) Governing Law; Jurisdiction; Jury Trial. The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its stockholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement and the other Transaction Documents shall be governed by the internal laws of the State of Illinois, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Illinois or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Illinois. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of Chicago, for the adjudication of any dispute hereunder or under the other Transaction Documents or in connection herewith or therewith, or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

(b) Counterparts. This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a ".pdf" format data file shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original, not a facsimile signature or a signature in a ".pdf" format data file.

(c) Headings. The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) Severability. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the

remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) Entire Agreement. This Agreement supersedes all other prior oral or written agreements between the Investor, the Company, their affiliates and persons acting on their behalf with respect to the matters discussed herein, and this Agreement, the other Transaction Documents and the instruments referenced herein contain the entire understanding of the parties with respect to the matters covered herein and therein and, except as specifically set forth herein or therein, neither the Company nor the Investor makes any representation, warranty, covenant or undertaking with respect to such matters. The Company acknowledges and agrees that it has not relied on, in any manner whatsoever, any representations or statements, written or oral, other than as expressly set forth in the Transaction Documents.

(f) Notices. Any notices, consents or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered: (i) upon receipt when delivered personally; (ii) upon receipt when sent by facsimile (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one Business Day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses and facsimile numbers for such communications shall be:

If to the Company:

Arrowhead Research Corporation
225 S. Lake Avenue, Suite 300
Pasadena, CA 91101
Telephone: 626-304-3400
Attention:

With a copy to:

Ropes & Gray LLP
Three Embarcadero Center
San Francisco, CA 94111
Telephone: 415-315-6395
Facsimile: 415-315-6026
Attention: Ryan A. Murr

If to the Investor:

Lincoln Park Capital Fund, LLC
440 North Wells, Suite 620
Chicago, IL 60654
Telephone: 312-822-9300
Facsimile: 312-822-9301
Attention: Josh Scheinfeld/Jonathan Cope

With a copy to:

Greenberg Traurig, LLP
The MetLife Building
200 Park Avenue
New York, NY 10166
Telephone: 212-801-9200

Facsimile: 212-801-6400
Attention: Anthony J. Marsico

If to the Transfer Agent:

Computershare, Inc.
250 Royall Street
Telephone: 818-254-3160
Attention: Jim Hunter
Email: jim.hunter@computershare.com

or at such other address and/or facsimile number and/or to the attention of such other person as the recipient party has specified by written notice given to each other party three (3) Business Days prior to the effectiveness of such change. Written confirmation of receipt (A) given by the recipient of such notice, consent or other communication, (B) mechanically or electronically generated by the sender's facsimile machine containing the time, date, and recipient facsimile number or (C) provided by a nationally recognized overnight delivery service, shall be rebuttable evidence of personal service, receipt by facsimile or receipt from a nationally recognized overnight delivery service in accordance with clause (i), (ii) or (iii) above, respectively.

(g) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns. The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Investor, including by merger or consolidation. The Investor may not assign its rights or obligations under this Agreement.

(h) No Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other person.

(i) Publicity. The Investor shall have the right to approve before issuance any press release, SEC filing or any other public disclosure made by or on behalf of the Company whatsoever with respect to, in any manner, the Investor, its purchases hereunder or any aspect of this Agreement or the transactions contemplated hereby; provided, however, that the Company shall be entitled, without the prior approval of the Investor, to make any press release or other public disclosure (including any filings with the SEC) with respect to such transactions as is required by applicable law and regulations so long as the Company and its counsel consult with the Investor in connection with any such press release or other public disclosure at least two (2) Business Days prior to its release. The Investor must be provided with a copy thereof at least two (2) Business Days prior to any release or use by the Company thereof. The Company agrees and acknowledges that its failure to fully comply with this provision constitutes a material adverse effect on its ability to perform its obligations under this Agreement.

(j) Further Assurances. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(k) No Financial Advisor, Placement Agent, Broker or Finder. The Company represents and warrants to the Investor that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby. The Company shall be responsible for the payment of any fees or commissions, if any, of any financial advisor, placement agent, broker or

finder relating to or arising out of the transactions contemplated hereby. The Company shall pay, and hold the Investor harmless against, any liability, loss or expense (including, without limitation, attorneys' fees and out of pocket expenses) arising in connection with any such claim.

(l) No Strict Construction. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(m) Remedies, Other Obligations, Breaches and Injunctive Relief. The Investor's remedies provided in this Agreement shall be cumulative and in addition to all other remedies available to the Investor under this Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief), no remedy of the Investor contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy and nothing herein shall limit the Investor's right to pursue actual damages for any failure by the Company to comply with the terms of this Agreement. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Investor and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Investor shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

(n) Enforcement Costs. If an attorney is retained to represent the Investor in any bankruptcy, reorganization, receivership or other proceedings affecting creditors' rights and involving a claim under this Agreement then the Company shall pay to the Investor, as incurred by the Investor, all reasonable costs and expenses including attorneys' fees incurred in connection therewith, in addition to all other amounts due hereunder. In any dispute arising under or relating to this Agreement, the prevailing party shall be awarded its reasonable costs and expenses, including attorneys' fees, incurred in connection therewith, in addition to all other amounts due hereunder.

(o) Failure or Indulgence Not Waiver. No failure or delay in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

* * * * *

IN WITNESS WHEREOF, the Investor and the Company have caused this Purchase Agreement to be duly executed as of the date first written above.

THE COMPANY:

ARROWHEAD RESEARCH CORPORATION

By: _____

Name:

Title:

INVESTOR:

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: _____

Name: Josh Scheinfeld

Title: President

SCHEDULES

Schedule 4(a)	Subsidiaries
Schedule 4(c)	Capitalization
Schedule 4(e)	Conflicts
Schedule 4(f)	Exchange Act Filings
Schedule 4(g)	Material Changes
Schedule 4(h)	Litigation
Schedule 4(k)	Intellectual Property

EXHIBITS

Exhibit A	Form of Company Counsel Opinion
Exhibit B	Form of Officer's Certificate
Exhibit C	Form of Resolutions of Board of Directors of the Company
Exhibit D	Form of Secretary's Certificate
Exhibit E	Form of Letter to Transfer Agent

SCHEDULE 4(a)

SUBSIDIARIES

Calando Pharmaceuticals, Inc.
Tego Biosciences Corporation
Agonn Systems, Inc.
Ablaris Therapeutics, Inc.

SCHEDULE 4(c)

CAPITALIZATION

As of the date hereof, without giving effect to the Closing, the authorized capital stock of the Company consists of 145,000,000 shares of Common Stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share ("**Preferred Stock**"). As of the date hereof, there are: (i) 87,804,443 shares of Common Stock issued and outstanding, (ii) no shares of Preferred Stock issued and outstanding, and (iii) up to 31,640,991 shares of Common Stock reserved for issuance upon exercise of options, warrants and other rights to acquire Common Stock outstanding as of the date hereof. All of the outstanding shares of capital stock of the Company have been validly issued and are fully paid and non-assessable.

SCHEDULE 4(e)

CONFLICTS

Not Applicable

SCHEDULE 4(f)

EXCHANGE ACT FILINGS AND SEC CORRESPONDENCE

Not Applicable

SCHEDULE 4(g)

MATERIAL CHANGES

Not Applicable

SCHEDULE 4(h)

LITIGATION

Not Applicable

SCHEDULE 4(k)

INTELLECTUAL PROPERTY

Not Applicable

DISCLOSURE SCHEDULES

Schedule 4(a) – Subsidiaries

Schedule 4(c) – Capitalization

Schedule 4(e) – No Conflicts

Schedule 4(f) – Exchange Act Filings

Schedule 4(g) – Absence of Certain Changes

Schedule 4(h) – Litigation

Schedule 4(k) – Intellectual Property Rights

EXHIBIT A

FORM OF COMPANY COUNSEL OPINION¹

Capitalized terms used herein but not defined herein, have the meaning set forth in the Purchase Agreement. Based on the foregoing, and subject to the assumptions and qualifications set forth herein, we are of the opinion that:

1. The Company is a corporation existing and in good standing under the laws of the State of Delaware.

2. The Company has the corporate power to execute and deliver, and perform its obligations under, each Transaction Document² to which it is a party. The Company has the corporate power to conduct its business as described in the Company's Annual Report on Form 10-K for the year ended September 30, 2010 and to own and use the properties owned and used by it.

3. The execution, delivery and performance by the Company of the Transaction Documents to which it is a party have been duly authorized by all necessary corporate action on the part of the Company. The execution and delivery of the Transaction Documents by the Company, the performance of the obligations of the Company thereunder and the consummation by it of the transactions contemplated therein have been duly authorized and approved by the Company's Board of Directors and no further consent, approval or authorization of the Company, its Board of Directors or its stockholders is required. The Transaction Documents to which the Company is a party have been duly executed and delivered by the Company and are valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting creditor's rights and remedies or other reasonable exceptions to be set forth in such opinion.

4. The execution, delivery and performance by the Company of the Transaction Documents and the consummation by the Company of the transactions contemplated thereby does not: (i) conflict with, constitute a breach of or default under (or an event which, with the giving of notice or lapse of time or both, constitutes or could constitute a breach or a default): (a) the Certificate of Incorporation or the Bylaws of the Company, (b) any material agreement, note, lease, mortgage, deed or other material instrument listed on Annex I attached hereto (the "Material Agreements")³, or (ii) result in any violation of any statute, law, rule or regulation applicable to the Company.

5. The issuance of the Purchase Shares and the Commitment Shares pursuant to the terms and conditions of the Transaction Documents has been duly authorized and the Initial Commitment

¹ Set forth below are the agreed upon opinion points that will be provided by Company counsel prior to the Commencement Date in an opinion letter in such counsel's customary form. Additionally, Company counsel will provide a customary negative assurance letter, reciting the participation of Company counsel in the due diligence review for the transaction, as well as counsel's involvement in the preparation of the relevant offering documents.

² Transaction Documents to mean the Purchase Agreement and the Registration Rights Agreement.

³ Material Agreements to consist of material contracts listed as exhibits to issuer's most recent Form 10-K and subsequent '34 Act filings.

Shares are validly issued, fully paid and non-assessable, and free of any preemptive rights arising under the Company's Certificate of Incorporation, Bylaws or the Delaware General Corporation Law (the "DGCL").

6. The Board of Directors has adopted a resolution reserving 50,000,000 shares of Common Stock for issuance under the Purchase Agreement. When issued and paid for in accordance with the Purchase Agreement, and assuming the availability of a sufficient number of authorized and unissued shares of Common Stock at such time, the Purchase Shares shall be validly issued, fully paid and non-assessable, and free of any preemptive rights arising under the Company's Certificate of Incorporation, Bylaws or the DGCL.

7. The Board of Directors has adopted a resolution reserving 886,189 shares of Common Stock for issuance as Additional Commitment Shares under the Purchase Agreement. When issued in accordance with the Purchase Agreement, and assuming the availability of a sufficient number of authorized and unissued shares of Common Stock at such time, the Additional Commitment Shares shall be validly issued, fully paid and non-assessable and free of any preemptive rights arising under the Company's Certificate of Incorporation, Bylaws or the DGCL.

8. The execution and delivery of the Registration Rights Agreement does not, and the performance by the Company of its obligations thereunder will not, give rise to any rights of any other person under the Material Contracts for the registration under the Securities Act of any shares of Common Stock or other securities of the Company, which rights have not been waived.

9. As of the date hereof, the authorized capital stock of the Company consists of 145,000,000 shares of common stock, \$.001 par value, and 5,000,000 shares of preferred stock, \$.001 par value.

10. Assuming the accuracy of the representations and warranties made by you and the Company in the Purchase Agreement and your compliance with the covenants made by you and the Company in the Transaction Documents, the offering, sale and issuance of the Commitment Shares and the Purchase Shares in accordance with the Stock Purchase Agreement does not require registration under the Securities Act.

11. Other than that which has been obtained and completed prior to the date hereof, no authorization, approval, consent or filing of any federal or state governmental body is required to be obtained by the Company to enter into and perform its obligations under the Transaction Documents, or for the Company to issue and sell the Commitment Shares and the Purchase Shares as contemplated by the Transaction Documents.

12. To our knowledge, there is no action, suit or proceeding pending against the Company before or by any California or federal or, with respect to the DGCL, Delaware, court governmental body, agency or official, that questions the validity or enforceability of the Purchase Agreement or the Registration Rights Agreement.⁴

* * *

⁴ This paragraph may either be included in the legal opinion or in the Rule 10b-5 negative assurance letter from company counsel to be delivered prior to the Commencement Date. The parties acknowledge and agree that company counsel shall provide to the Investor a Rule 10b-5 negative assurance letter prior to the Commencement Date, the form of which shall be reasonably acceptable to the Investor and its counsel.

EXHIBIT B

FORM OF OFFICER'S CERTIFICATE

This Officer's Certificate ("**Certificate**") is being delivered pursuant to Section 8(e) of that certain Purchase Agreement dated as of October 20, 2011, ("**Purchase Agreement**"), by and between **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation (the "**Company**"), and **LINCOLN PARK CAPITAL FUND, LLC** (the "**Investor**"). Terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

The undersigned, _____, of the Company, hereby certifies as follows:

1. I am the _____ of the Company and make the statements contained in this Certificate;

2. The representations and warranties of the Company are true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 of the Purchase Agreement, in which case, such representations and warranties are true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date);

3. The Company has performed, satisfied and complied in all material respects with covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date.

4. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any Bankruptcy Law nor does the Company or any of its Subsidiaries have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy or insolvency proceedings. The Company is financially solvent and is generally able to pay its debts as they become due.

IN WITNESS WHEREOF, I have hereunder signed my name on this _____ day of _____.

Name:

Title:

The undersigned as Secretary of **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation, hereby certifies that _____ is the duly elected, appointed, qualified and acting _____ of _____ and that the signature appearing above is his genuine signature.

Secretary

EXHIBIT C

**FORM OF COMPANY RESOLUTIONS
FOR SIGNING PURCHASE AGREEMENT**

WHEREAS, there has been presented to the Board of Directors of ARROWHEAD RESEARCH CORPORATION, a Delaware corporation (the "Corporation") a draft of the Purchase Agreement (the "Purchase Agreement") by and between the Corporation and Lincoln Park Capital Fund, LLC ("Lincoln Park"), providing for the purchase by Lincoln Park of up to Fifteen Million Dollars (\$15,000,000) of the Corporation's common stock, \$.001 par value per share (the "Common Stock"); and

WHEREAS, after consideration and review of the Purchase Agreement, the documents attached thereto and other factors deemed relevant by the Board of Directors, the Board of Directors has determined that it is advisable and in the best interests of the Corporation to engage in the transactions contemplated by the Purchase Agreement, including, but not limited to, the issuance of 689,258 shares of Common Stock to Lincoln Park as an initial commitment fee (the "Initial Commitment Shares") and the sale of up to \$15,000,000 worth of shares of Common Stock to Lincoln Park (the "Purchase Shares").

Transaction Documents

NOW, THEREFORE, BE IT RESOLVED, that the transactions described in the Purchase Agreement are hereby approved and each of (the "Authorized Officers") are severally authorized to execute and deliver the Purchase Agreement on behalf of the Company, and any other agreements or documents contemplated thereby including, without limitation, a registration rights agreement (the "Registration Rights Agreement") providing for the registration of the shares of the Company's Common Stock issuable in respect of the Purchase Agreement on behalf of the Corporation, with such amendments, changes, additions and deletions as the Authorized Officers may deem to be appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

FURTHER RESOLVED, that the terms and provisions of the Registration Rights Agreement by and among the Corporation and Lincoln Park, a draft of which has been provided to the Board, are hereby approved and the Authorized Officers are authorized to execute and deliver the Registration Rights Agreement on behalf of the Company, with such amendments, changes, additions and deletions as the Authorized Officer may deem appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

FURTHER RESOLVED, that the terms and provisions of the Form of Irrevocable Transfer Agent Instructions (the "Instructions"), a draft of which has been provided to the Board, are hereby approved and the Authorized Officers are authorized to execute and deliver the Instructions on behalf of the Company, with such amendments, changes, additions and deletions as the Authorized Officers may deem appropriate and approve on behalf of, the Corporation, such approval to be conclusively evidenced by the signature of an Authorized Officer thereon; and

Issuance of Common Stock

FURTHER RESOLVED, that the Corporation is hereby authorized to issue to Lincoln Park

689,258 shares of Common Stock as Initial Commitment Shares pursuant to the Purchase Agreement, and the Initial Commitment Shares shall be duly authorized, validly issued, fully paid and nonassessable with no personal liability attaching to the ownership thereof; and

FURTHER RESOLVED, that the Corporation is hereby authorized to issue to Lincoln Park up to 50,000,000 shares of Common Stock as the Purchase Shares and upon issuance of the Purchase Shares pursuant to the Purchase Agreement, the Purchase Shares will be duly authorized, validly issued, fully paid and nonassessable with no personal liability attaching to the ownership thereof; and

FURTHER RESOLVED, that the Corporation shall initially reserve 1,000,000 shares of Common Stock for issuance as Purchase Shares under the Purchase Agreement; and

FURTHER RESOLVED, that the Corporation is hereby authorized to issue 886,189 shares of Common Stock (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) in connection with the purchase of Purchase Shares (the "Additional Commitment Shares") in accordance with the terms of the Purchase Agreement and that, upon issuance of the Additional Commitment Shares pursuant to the Purchase Agreement, the Additional Commitment Shares will be duly authorized, validly issued, fully paid and nonassessable with no personal liability attaching to the ownership thereof; and

FURTHER RESOLVED, that the Corporation shall initially reserve 886,189 shares of Common Stock (subject to equitable adjustment for any reorganization, recapitalization, non-cash dividend, stock split or other similar transaction) for issuance as Additional Commitment Shares under the Purchase Agreement; and

Approval of Actions

FURTHER RESOLVED, that, without limiting the foregoing, the Authorized Officers are, and each of them hereby is, authorized and directed to proceed on behalf of the Corporation and to take all such steps as deemed necessary or appropriate, with the advice and assistance of counsel, to cause the Corporation to consummate the agreements referred to herein and to perform its obligations under such agreements; and

FURTHER RESOLVED, that the Authorized Officers be, and each of them hereby is, authorized, empowered and directed on behalf of and in the name of the Corporation, to take or cause to be taken all such further actions and to execute and deliver or cause to be executed and delivered all such further agreements, amendments, documents, certificates, reports, schedules, applications, notices, letters and undertakings and to incur and pay all such fees and expenses as in their judgment shall be necessary, proper or desirable to carry into effect the purpose and intent of any and all of the foregoing resolutions, and that all actions heretofore taken by any officer or director of the Corporation in connection with the transactions contemplated by the agreements described herein are hereby approved, ratified and confirmed in all respects.

EXHIBIT D

FORM OF SECRETARY'S CERTIFICATE

This Secretary's Certificate ("Certificate") is being delivered pursuant to Section 7(k) of that certain Purchase Agreement dated as of October 20, 2011, ("Purchase Agreement"), by and between **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation (the "Company") and **LINCOLN PARK CAPITAL FUND, LLC** (the "Investor"), pursuant to which the Company may sell to the Investor up to Fifteen Million Dollars (\$15,000,000) of the Company's Common Stock, \$.001 par value per share (the "Common Stock"). Terms used herein and not otherwise defined shall have the meanings ascribed to them in the Purchase Agreement.

The undersigned, _____, Secretary of the Company, hereby certifies as follows:

1. I am the Secretary of the Company and make the statements contained in this Secretary's Certificate.
2. Attached hereto as Exhibit A and Exhibit B are true, correct and complete copies of the Company's bylaws ("Bylaws") and Certificate of Incorporation ("Articles"), in each case, as amended through the date hereof, and no action has been taken by the Company, its directors, officers or stockholders, in contemplation of the filing of any further amendment relating to or affecting the Bylaws or Articles.
3. Attached hereto as Exhibit C are true, correct and complete copies of the resolutions duly adopted by the Board of Directors of the Company on _____, at which a quorum was present and acting throughout. Such resolutions have not been amended, modified or rescinded and remain in full force and effect and such resolutions are the only resolutions adopted by the Company's Board of Directors, or any committee thereof, or the stockholders of the Company relating to or affecting (i) the entering into and performance of the Purchase Agreement, or the issuance, offering and sale of the Purchase Shares and the Commitment Shares and (ii) and the performance of the Company of its obligation under the Transaction Documents as contemplated therein.
4. As of the date hereof, the authorized, issued and reserved capital stock of the Company is as set forth on Exhibit D hereto.

IN WITNESS WHEREOF, I have hereunder signed my name on this _____ day of _____ .

Secretary

The undersigned as _____ of ARROWHEAD RESEARCH CORPORATION, a Delaware corporation, hereby certifies that _____ is the duly elected, appointed, qualified and acting Secretary of _____, and that the signature appearing above is his genuine signature.

EXHIBIT E

**FORM OF LETTER TO THE TRANSFER AGENT FOR THE ISSUANCE OF THE INITIAL
COMMITMENT SHARES AT SIGNING OF THE PURCHASE AGREEMENT**

[COMPANY LETTERHEAD]

[DATE]

[TRANSFER AGENT]

Re: Issuance of Common Shares to Lincoln Park Capital Fund, LLC

Dear _____,

On behalf of **ARROWHEAD RESEARCH CORPORATION**, (the "Company"), you are hereby instructed to issue **as soon as possible 689,258** shares of our common stock as Initial Commitment Shares in the name of **Lincoln Park Capital Fund, LLC**. The share certificate should be dated October 20, 2011. I have included a true and correct copy of the resolutions adopted by the Board of Directors of the Company adopting resolutions approving the issuance of these shares. The shares should be issued subject to the following restrictive legend:

THE SECURITIES REPRESENTED BY THIS INSTRUMENT HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR ANY STATE SECURITIES LAWS, AND NO SALE, ASSIGNMENT, PLEDGE, HYPOTHECATION, GIFT, TRANSFER OR OTHER DISPOSITION OR OFFER TO DO ANY OF THE FOREGOING MAY BE MADE UNLESS A REGISTRATION STATEMENT UNDER THE SECURITIES ACT AND OTHER APPLICABLE SECURITIES LAWS WITH RESPECT TO SUCH SECURITIES IS THEN IN EFFECT, OR IN THE OPINION OF COUNSEL, ACCEPTABLE TO THE ISSUER, SUCH REGISTRATION UNDER THE SECURITIES ACT AND OTHER APPLICABLE SECURITIES LAWS IS NOT REQUIRED.

The share certificate should be sent **as soon as possible via overnight mail** to the following address:

Lincoln Park Capital Fund, LLC
440 North Wells, Suite 620
Chicago, IL 60654
Attention: Josh Scheinfeld/Jonathan Cope

Thank you very much for your help. Please call me at _____ if you have any questions or need anything further.

ARROWHEAD RESEARCH CORPORATION

BY: _____
[name]
[title]

REGISTRATION RIGHTS AGREEMENT

REGISTRATION RIGHTS AGREEMENT (this “**Agreement**”), dated as of October 20, 2011, by and between **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation, (the “**Company**”), and **LINCOLN PARK CAPITAL FUND, LLC**, an Illinois limited liability company (together with its permitted assigns, the “**Buyer**”). Capitalized terms used herein and not otherwise defined herein shall have the respective meanings set forth in the Purchase Agreement by and between the parties hereto, dated as of the date hereof (as amended, restated, supplemented or otherwise modified from time to time, the “**Purchase Agreement**”).

WHEREAS:

The Company has agreed, upon the terms and subject to the conditions of the Purchase Agreement, to issue to the Buyer up to Fifteen Million Dollars (\$15,000,000) of Purchase Shares, subject in all cases to the Maximum Share Cap, and to induce the Buyer to enter into the Purchase Agreement, the Company has agreed to provide certain registration rights under the Securities Act of 1933, as amended, and the rules and regulations thereunder, or any similar successor statute (collectively, the “**Securities Act**”), and applicable state securities laws.

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Buyer hereby agree as follows:

1. DEFINITIONS.

As used in this Agreement, the following terms shall have the following meanings:

a. “**Investor**” means the Buyer, any transferee or assignee thereof to whom a Buyer assigns its rights under this Agreement and who agrees to become bound by the provisions of this Agreement in accordance with Section 9 and any transferee or assignee thereof to whom a transferee or assignee assigns its rights under this Agreement and who agrees to become bound by the provisions of this Agreement in accordance with Section 9.

b. “**Person**” means any person or entity including but not limited to any corporation, a limited liability company, an association, a partnership, an organization, a business, an individual, a governmental or political subdivision thereof or a governmental agency.

c. “**Register**,” “**registered**,” and “**registration**” refer to a registration effected by preparing and filing one or more registration statements of the Company in compliance with the Securities Act and pursuant to Rule 415 under the Securities Act or any successor rule providing for offering securities on a continuous basis (“**Rule 415**”), and the declaration or ordering of effectiveness of such registration statement(s) by the United States Securities and Exchange Commission (the “**SEC**”).

d. “**Registrable Securities**” means the Purchase Shares which have been, or which may from time to time be, issued or issuable to the Investor upon purchases of the Available Amount under the Purchase Agreement (without regard to any limitation or restriction on purchases) and the Commitment Shares issued or issuable to the Investor and any shares of capital stock issued or issuable with respect to the Purchase Shares and the Commitment Shares or the Purchase Agreement as a result of any stock split, stock dividend, recapitalization, exchange or similar event or otherwise, without regard to any limitation on purchases under the Purchase Agreement.

e. “**Registration Statement**” means the registration statement of the Company covering only the sale of the Registrable Securities.

2. REGISTRATION.

a. Mandatory Registration. The Company shall within thirty (30) Business Days from the date hereof file with the SEC the Registration Statement. The Registration Statement shall register only the Registrable Securities and no other securities of the Company. The Investor and its counsel shall have a reasonable opportunity to review and comment upon such registration statement or amendment to such registration statement and any related prospectus prior to its filing with the SEC. Investor shall furnish all information reasonably requested by the Company for inclusion therein. The Company shall use its reasonable best efforts to have the Registration Statement or amendment declared effective by the SEC at the earliest possible date after filing. The Company shall use reasonable best efforts to keep the Registration Statement effective pursuant to Rule 415 promulgated under the Securities Act and available for sales of all of the Registrable Securities at all times until the earlier of (i) the date as of which the Investor may sell all of the Registrable Securities without restriction pursuant to the last sentence of Rule 144(b)(1)(i) promulgated under the Securities Act (or successor thereto) or (ii) the date on which the Investor shall have sold all the Registrable Securities and no Available Amount remains under the Purchase Agreement (the “**Registration Period**”). The Registration Statement (including any amendments or supplements thereto and prospectuses contained therein) shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein, in light of the circumstances in which they were made, not misleading.

b. Rule 424 Prospectus. The Company shall, as required by applicable securities regulations, from time to time file with the SEC, pursuant to Rule 424 promulgated under the Securities Act, the prospectus and prospectus supplements, if any, to be used in connection with sales of the Registrable Securities under the Registration Statement. The Investor and its counsel shall have a reasonable opportunity to review and comment upon such prospectus prior to its filing with the SEC. The Investor shall use its reasonable best efforts to comment upon such prospectus within one (1) Business Day from the date the Investor receives the final version of such prospectus.

c. Sufficient Number of Shares Registered. In the event the number of shares available under the Registration Statement is insufficient to cover all of the Registrable Securities, the Company shall amend the Registration Statement or file a new registration statement (a “**New Registration Statement**”), so as to cover all of such Registrable Securities as soon as practicable, but in any event not later than ten (10) Business Days after the necessity therefor arises, subject to any limits on registration that the Staff of the SEC may impose pursuant to Rule 415 under the Securities Act. The Company shall use its reasonable best efforts to cause such amendment and/or New Registration Statement to become effective as soon as practicable following the filing thereof.

3. RELATED OBLIGATIONS.

With respect to the Registration Statement and whenever any Registrable Securities are to be registered pursuant to Section 2(b) including on any New Registration Statement, the Company shall use its reasonable best efforts to effect the registration of the Registrable Securities in accordance with the intended method of disposition thereof and, pursuant thereto, the Company shall have the following obligations:

a. The Company shall prepare and file with the SEC such amendments (including post-effective amendments) and supplements to any registration statement and the prospectus used in connection with such registration statement, which prospectus is to be filed pursuant to Rule 424

promulgated under the Securities Act, as may be necessary to keep the Registration Statement or any New Registration Statement effective at all times during the Registration Period, and, during such period, comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities of the Company covered by the Registration Statement or any New Registration Statement until such time as all of such Registrable Securities shall have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof as set forth in such registration statement.

b. The Company shall permit the Investor to review and comment upon the Registration Statement or any New Registration Statement and all amendments and supplements thereto at least two (2) Business Days prior to their filing with the SEC, and not file any document in a form to which Investor reasonably objects. The Investor shall use its reasonable best efforts to comment upon the Registration Statement or any New Registration Statement and any amendments or supplements thereto within two (2) Business Days from the date the Investor receives the final version thereof. The Company shall, at the request of the Investor, furnish to the Investor, without charge any correspondence from the SEC or the Staff of the SEC to the Company or its representatives relating to the Registration Statement or any New Registration Statement.

c. Upon request of the Investor, the Company shall furnish to the Investor, (i) promptly after the same is prepared and filed with the SEC, at least one copy of such registration statement and any amendment(s) thereto, including financial statements and schedules, all documents incorporated therein by reference and all exhibits, (ii) upon the effectiveness of any registration statement, a copy of the prospectus included in such registration statement and all amendments and supplements thereto (or such other number of copies as the Investor may reasonably request) and (iii) such other documents, including copies of any preliminary or final prospectus, as the Investor may reasonably request from time to time in order to facilitate the disposition of the Registrable Securities owned by the Investor. For the avoidance of doubt, any filing available to the Investor via the SEC's live EDGAR system shall be deemed "furnished to the Investor" hereunder.

d. The Company shall use reasonable best efforts to (i) register and qualify the Registrable Securities covered by a registration statement under such other securities or "blue sky" laws of such jurisdictions in the United States as the Investor reasonably requests, (ii) prepare and file in those jurisdictions, such amendments (including post-effective amendments) and supplements to such registrations and qualifications as may be necessary to maintain the effectiveness thereof during the Registration Period, (iii) take such other actions as may be necessary to maintain such registrations and qualifications in effect at all times during the Registration Period, and (iv) take all other actions reasonably necessary or advisable to qualify the Registrable Securities for sale in such jurisdictions; provided, however, that the Company shall not be required in connection therewith or as a condition thereto to (x) qualify to do business in any jurisdiction where it would not otherwise be required to qualify but for this Section 3(d), (y) subject itself to general taxation in any such jurisdiction, or (z) file a general consent to service of process in any such jurisdiction. The Company shall promptly notify the Investor who holds Registrable Securities of the receipt by the Company of any notification with respect to the suspension of the registration or qualification of any of the Registrable Securities for sale under the securities or "blue sky" laws of any jurisdiction in the United States or its receipt of actual notice of the initiation or threatening of any proceeding for such purpose.

e. As promptly as practicable after becoming aware of such event or facts, the Company shall notify the Investor in writing of the happening of any event or existence of such facts as a result of which the prospectus included in any registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, and promptly prepare a supplement or amendment to such registration statement to correct such untrue

statement or omission, and deliver a copy of such supplement or amendment to the Investor (or such other number of copies as the Investor may reasonably request). The Company shall also promptly notify the Investor in writing (i) when a prospectus or any prospectus supplement or post-effective amendment has been filed, and when a registration statement or any post-effective amendment has become effective (notification of such effectiveness shall be delivered to the Investor by facsimile on the same day of such effectiveness and by overnight mail), (ii) of any request by the SEC for amendments or supplements to any registration statement or related prospectus or related information, and (iii) of the Company's reasonable determination that a post-effective amendment to a registration statement would be appropriate.

f. The Company shall use its reasonable best efforts to prevent the issuance of any stop order or other suspension of effectiveness of any registration statement, or the suspension of the qualification of any Registrable Securities for sale in any jurisdiction and, if such an order or suspension is issued, to obtain the withdrawal of such order or suspension at the earliest possible moment and to notify the Investor of the issuance of such order and the resolution thereof or its receipt of actual notice of the initiation or threat of any proceeding for such purpose.

g. The Company shall (i) cause all the Registrable Securities to be listed on each securities exchange on which securities of the same class or series issued by the Company are then listed, if any, if the listing of such Registrable Securities is then permitted under the rules of such exchange, or (ii) secure designation and quotation of all the Registrable Securities on the Principal Market. The Company shall pay all fees and expenses in connection with satisfying its obligation under this Section.

h. The Company shall cooperate with the Investor to facilitate the timely preparation and delivery of certificates (not bearing any restrictive legend as contemplated in Section 6 of the Purchase Agreement) representing the Registrable Securities to be offered pursuant to any registration statement and enable such certificates to be in such denominations or amounts as the Investor may reasonably request and registered in such names as the Investor may request.

i. The Company shall at all times provide a transfer agent and registrar with respect to its Common Stock.

j. If reasonably requested by the Investor, the Company shall (i) promptly incorporate in a prospectus supplement or post-effective amendment such information as the Investor believes should be included therein relating to the sale and distribution of Registrable Securities, including, without limitation, information with respect to the number of Registrable Securities being sold, the purchase price being paid therefor and any other terms of the offering of the Registrable Securities; (ii) make all required filings of such prospectus supplement or post-effective amendment as soon as notified of the matters to be incorporated in such prospectus supplement or post-effective amendment; and (iii) supplement or make amendments to any registration statement.

k. The Company shall use its reasonable best efforts to cause the Registrable Securities covered by any registration statement to be registered with or approved by such other governmental agencies or authorities as may be necessary to consummate the disposition of such Registrable Securities.

l. Within one (1) Business Day after any registration statement which includes the Registrable Securities is ordered effective by the SEC, the Company shall deliver, and shall cause legal counsel for the Company to deliver, to the transfer agent for such Registrable Securities (with copies to the Investor) confirmation that such registration statement has been declared effective by the SEC in the form attached hereto as Exhibit A. Thereafter, if requested by the Buyer at any time, the Company shall

deliver to the Buyer a written confirmation whether or not the effectiveness of such registration statement has lapsed at any time for any reason (including, without limitation, the issuance of a stop order) and whether or not the registration statement is current and available to the Buyer for sale of all of the Registrable Securities.

m. The Company shall take all other reasonable actions necessary to expedite and facilitate disposition by the Investor of Registrable Securities pursuant to any registration statement.

4. OBLIGATIONS OF THE INVESTOR.

a. The Company shall notify the Investor in writing of the information the Company reasonably requires from the Investor in connection with any registration statement hereunder. The Investor shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request.

b. The Investor agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of any registration statement hereunder.

c. The Investor agrees that, upon receipt of any notice from the Company of the happening of any event or existence of facts of the kind described in Section 3(f) or the first sentence of 3(e), the Investor will immediately discontinue disposition of Registrable Securities pursuant to any registration statement(s) covering such Registrable Securities until the Investor's receipt of the copies of the supplemented or amended prospectus contemplated by Section 3(f) or the first sentence of 3(e). Notwithstanding anything to the contrary, the Company shall cause its transfer agent to promptly deliver shares of Common Stock without any restrictive legend in accordance with the terms of the Purchase Agreement in connection with any sale of Registrable Securities with respect to which an Investor has entered into a contract for sale prior to the Investor's receipt of a notice from the Company of the happening of any event of the kind described in Section 3(f) or the first sentence of Section 3(e) and for which the Investor has not yet settled.

5. EXPENSES OF REGISTRATION.

All reasonable expenses, other than sales or brokerage commissions, incurred by the Company in connection with registrations, filings or qualifications pursuant to Sections 2 and 3, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees, and fees and disbursements of counsel for the Company, if any, shall be paid by the Company.

6. INDEMNIFICATION.

a. To the fullest extent permitted by law, the Company will, and hereby does, indemnify, hold harmless and defend the Investor, each Person, if any, who controls the Investor, the members, the directors, officers, partners, employees, agents, representatives of the Investor and each Person, if any, who controls the Investor within the meaning of the Securities Act or the Securities Exchange Act of 1934, as amended (the "**Exchange Act**") (each, an "**Indemnified Person**"), against any losses, claims, damages, liabilities, judgments, fines, penalties, charges, costs, attorneys' fees, amounts paid in settlement or expenses, joint or several, (collectively, "**Claims**") incurred in investigating, preparing or defending any action, claim, suit, inquiry, proceeding, investigation or appeal taken from the foregoing by or before any court or governmental, administrative or other regulatory agency, body or the SEC, whether pending or threatened, whether or not an indemnified party is or may be a party thereto

(“**Indemnified Damages**”), to which any of them may become subject insofar as such Claims (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon: (i) any untrue statement or alleged untrue statement of a material fact in the Registration Statement, any New Registration Statement or any post-effective amendment thereto or in any filing made in connection with the qualification of the offering under the securities or other “blue sky” laws of any jurisdiction in which Registrable Securities are offered (“**Blue Sky Filing**”), or the omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) any untrue statement or alleged untrue statement of a material fact contained in the final prospectus (as amended or supplemented, if the Company files any amendment thereof or supplement thereto with the SEC) or the omission or alleged omission to state therein any material fact necessary to make the statements made therein, in light of the circumstances under which the statements therein were made, not misleading, (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any other law, including, without limitation, any state securities law, or any rule or regulation thereunder relating to the offer or sale of the Registrable Securities pursuant to the Registration Statement or any New Registration Statement or (iv) any material violation by the Company of this Agreement (the matters in the foregoing clauses (i) through (iv) being, collectively, “**Violations**”). The Company shall reimburse each Indemnified Person promptly as such expenses are incurred and are due and payable, for any reasonable legal fees or other reasonable expenses incurred by them in connection with investigating or defending any such Claim. Notwithstanding anything to the contrary contained herein, the indemnification agreement contained in this Section 6(a): (i) shall not apply to a Claim by an Indemnified Person arising out of or based upon a Violation which occurs in reliance upon and in conformity with information about the Investor furnished in writing to the Company by such Indemnified Person expressly for use in connection with the preparation of the Registration Statement, any New Registration Statement or any such amendment thereof or supplement thereto, if such prospectus was timely made available by the Company pursuant to Section 3(c) or Section 3(e); (ii) with respect to any superseded prospectus, shall not inure to the benefit of any such person from whom the person asserting any such Claim purchased the Registrable Securities that are the subject thereof (or to the benefit of any person controlling such person) if the untrue statement or omission of material fact contained in the superseded prospectus was corrected in the revised prospectus, as then amended or supplemented, if such revised prospectus was timely made available by the Company pursuant to Section 3(c) or Section 3(e), and the Indemnified Person was promptly advised in writing not to use the incorrect prospectus prior to the use giving rise to a violation and such Indemnified Person, notwithstanding such advice, used it; (iii) shall not be available to the extent such Claim is based on a failure of the Investor to deliver or to cause to be delivered the prospectus made available by the Company, if such prospectus was timely made available by the Company pursuant to Section 3(c) or Section 3(e); and (iv) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of the Indemnified Person and shall survive the transfer of the Registrable Securities by the Investor pursuant to Section 9.

b. In connection with the Registration Statement or any New Registration Statement, the Investor agrees to severally and not jointly indemnify, hold harmless and defend, to the same extent and in the same manner as is set forth in Section 6(a), the Company, each of its directors, each of its officers who signs the Registration Statement or any New Registration Statement, each Person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act (collectively and together with an Indemnified Person, an “**Indemnified Party**”), against any Claim or Indemnified Damages to which any of them may become subject, under the Securities Act, the Exchange Act or otherwise, insofar as such Claim or Indemnified Damages arise out of or are based upon any Violation, in each case to the extent, and only to the extent, that such Violation occurs in reliance upon and in conformity with written information about the Investor set forth on Exhibit B attached hereto and furnished to the Company by the Investor expressly for use in connection with such registration

statement; and, subject to Section 6(d), the Investor will reimburse any legal or other expenses reasonably incurred by them in connection with investigating or defending any such Claim; provided, however, that the indemnity agreement contained in this Section 6(b) and the agreement with respect to contribution contained in Section 7 shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Investor, which consent shall not be unreasonably withheld; provided, further, however, that the Investor shall be liable under this Section 6(b) for only that amount of a Claim or Indemnified Damages as does not exceed the net proceeds to the Investor as a result of the sale of Registrable Securities pursuant to such registration statement. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such Indemnified Party and shall survive the transfer of the Registrable Securities by the Investor pursuant to Section 9.

c. Promptly after receipt by an Indemnified Person or Indemnified Party under this Section 6 of notice of the commencement of any action or proceeding (including any governmental action or proceeding) involving a Claim, such Indemnified Person or Indemnified Party shall, if a Claim in respect thereof is to be made against any indemnifying party under this Section 6, deliver to the indemnifying party a written notice of the commencement thereof, and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume control of the defense thereof with counsel mutually satisfactory to the indemnifying party and the Indemnified Person or the Indemnified Party, as the case may be; provided, however, that an Indemnified Person or Indemnified Party shall have the right to retain its own counsel with the fees and expenses to be paid by the indemnifying party, if, in the reasonable opinion of counsel retained by the indemnifying party, the representation by such counsel of the Indemnified Person or Indemnified Party and the indemnifying party would be inappropriate due to actual or potential differing interests between such Indemnified Person or Indemnified Party and any other party represented by such counsel in such proceeding. The Indemnified Party or Indemnified Person shall cooperate fully with the indemnifying party in connection with any negotiation or defense of any such action or claim by the indemnifying party and shall furnish to the indemnifying party all information reasonably available to the Indemnified Party or Indemnified Person which relates to such action or claim. The indemnifying party shall keep the Indemnified Party or Indemnified Person fully apprised at all times as to the status of the defense or any settlement negotiations with respect thereto. No indemnifying party shall be liable for any settlement of any action, claim or proceeding effected without its written consent, provided, however, that the indemnifying party shall not unreasonably withhold, delay or condition its consent. No indemnifying party shall, without the consent of the Indemnified Party or Indemnified Person, consent to entry of any judgment or enter into any settlement or other compromise which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such Indemnified Party or Indemnified Person of a release from all liability in respect to such claim or litigation. Following indemnification as provided for hereunder, the indemnifying party shall be subrogated to all rights of the Indemnified Party or Indemnified Person with respect to all third parties, firms or corporations relating to the matter for which indemnification has been made. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action shall not relieve such indemnifying party of any liability to the Indemnified Person or Indemnified Party under this Section 6, except to the extent that the indemnifying party is prejudiced in its ability to defend such action.

d. The indemnification required by this Section 6 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or Indemnified Damages are incurred, subject to the delivery of an undertaking to reimburse such advanced amounts if it is ultimately determined that the Indemnified Party or Indemnified Person, as applicable, was not entitled to indemnification or contribution hereunder.

e. The indemnity agreements contained herein shall be in addition to (i) any cause of action or similar right of the Indemnified Party or Indemnified Person against the indemnifying party or others, and (ii) any liabilities the indemnifying party may be subject to pursuant to the law.

7. CONTRIBUTION.

To the extent any indemnification by an indemnifying party is prohibited or limited by law, the indemnifying party agrees to make the maximum contribution with respect to any amounts for which it would otherwise be liable under Section 6 to the fullest extent permitted by law; provided, however, that: (i) no seller of Registrable Securities guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any seller of Registrable Securities who was not guilty of fraudulent misrepresentation; and (ii) contribution by any seller of Registrable Securities shall be limited in amount to the net amount of proceeds received by such seller from the sale of such Registrable Securities.

8. REPORTS AND DISCLOSURE UNDER THE SECURITIES ACTS.

With a view to making available to the Investor the benefits of Rule 144 promulgated under the Securities Act or any other similar rule or regulation of the SEC that may at any time permit the Investor to sell securities of the Company to the public without registration (“**Rule 144**”), the Company agrees, at the Company’s sole expense, to:

a. make and keep public information available, as those terms are understood and defined in Rule 144;

b. file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act so long as the Company remains subject to such requirements and the filing of such reports and other documents is required for the applicable provisions of Rule 144;

c. furnish to the Investor so long as the Investor owns Registrable Securities, promptly upon request, (i) a written statement by the Company that it has complied with the reporting and/or disclosure provisions of Rule 144, the Securities Act and the Exchange Act, and (ii) such other information as may be reasonably requested to permit the Investor to sell such securities pursuant to Rule 144 without registration; and

d. take such additional action as is requested by the Investor to enable the Investor to sell the Registrable Securities pursuant to Rule 144, including, without limitation, delivering such appropriate instructions to the Company’s Transfer Agent as may be requested from time to time by the Investor and otherwise fully cooperate with Investor and Investor’s broker to effect such sale of securities pursuant to Rule 144.

The Company agrees that damages may be an inadequate remedy for any breach of the terms and provisions of this Section 8 and that Investor shall, whether or not it is pursuing any remedies at law, be entitled to seek equitable relief in the form of a preliminary or permanent injunctions, without having to post any bond or other security, upon any breach or threatened breach of any such terms or provisions.

9. ASSIGNMENT OF REGISTRATION RIGHTS.

The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Investor. The Investor may not assign its rights under this Agreement without the written consent of the Company, other than to an affiliate of the Investor controlled by Jonathan Cope or Josh Scheinfeld.

10. AMENDMENT OF REGISTRATION RIGHTS.

Provisions of this Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Investor.

11. MISCELLANEOUS.

a. A Person is deemed to be a holder of Registrable Securities whenever such Person owns or is deemed to own of record such Registrable Securities. If the Company receives conflicting instructions, notices or elections from two or more Persons with respect to the same Registrable Securities, the Company shall act upon the basis of instructions, notice or election received from the registered owner of such Registrable Securities.

b. Any notices, consents, waivers or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered: (i) upon receipt, when delivered personally; (ii) upon receipt, when sent by facsimile (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one (1) Business Day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses and facsimile numbers for such communications shall be:

If to the Company:

Arrowhead Research Corporation
225 S. Lake Avenue, Suite 300
Pasadena, CA 91101
Telephone: 626-304-3400
Facsimile:
Attention:

With a copy to:

Ropes & Gray LLP
Three Embarcadero Center
San Francisco, CA 94111
Telephone: 415-315-6395
Facsimile: 415-315-6026
Attention: Ryan A. Murr

If to the Investor:

Lincoln Park Capital Fund, LLC
440 N. Wells, Suite 620
Chicago, IL 60654
Telephone: 312-822-9300
Facsimile: 312-822-9301
Attention: Josh Scheinfeld/Jonathan Cope

With a copy to:

Greenberg Traurig, LLP
The MetLife Building
200 Park Avenue
New York, NY 10166
Telephone: 212-801-9200
Facsimile: 212-801-6400
Attention: Anthony J. Marsico

or at such other address and/or facsimile number and/or to the attention of such other person as the recipient party has specified by written notice given to each other party three (3) Business Days prior to the effectiveness of such change. Written confirmation of receipt (A) given by the recipient of such notice, consent, waiver or other communication, (B) mechanically or electronically generated by the sender's facsimile machine containing the time, date, recipient facsimile number and an image of the first page of such transmission or (C) provided by a nationally recognized overnight delivery service, shall be rebuttable evidence of personal service, receipt by facsimile or receipt from a nationally recognized overnight delivery service in accordance with clause (i), (ii) or (iii) above, respectively.

c. Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, shall not operate as a waiver thereof.

d. The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its stockholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of Illinois, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of Illinois or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of Illinois. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting the City of Chicago, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction. **EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION**

HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.

e. This Agreement and the Purchase Agreement constitute the entire agreement among the parties hereto with respect to the subject matter hereof and thereof. There are no restrictions, promises, warranties or undertakings, other than those set forth or referred to herein and therein. This Agreement and the Purchase Agreement supersede all prior agreements and understandings among the parties hereto with respect to the subject matter hereof and thereof.

f. Subject to the requirements of Section 9, this Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties hereto.

g. The headings in this Agreement are for convenience of reference only and shall not limit or otherwise affect the meaning hereof.

h. This Agreement may be executed in identical counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement. This Agreement, once executed by a party, may be delivered to the other party hereto by facsimile transmission or by e-mail in a “.pdf” format data file of a copy of this Agreement bearing the signature of the party so delivering this Agreement.

i. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

j. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent and no rules of strict construction will be applied against any party.

k. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other Person.

* * * * *

IN WITNESS WHEREOF, the parties have caused this Registration Rights Agreement to be duly executed as of day and year first above written.

THE COMPANY:

ARROWHEAD RESEARCH CORPORATION

By: _____

Name:

Title:

BUYER:

LINCOLN PARK CAPITAL FUND, LLC

BY: LINCOLN PARK CAPITAL, LLC

BY: ROCKLEDGE CAPITAL CORPORATION

By: _____

Name: Josh Scheinfeld

Title: President

EXHIBIT A

TO REGISTRATION RIGHTS AGREEMENT

**FORM OF NOTICE OF EFFECTIVENESS
OF REGISTRATION STATEMENT**

[Date]

[TRANSFER AGENT]

Re: []

Ladies and Gentlemen:

We are counsel to **ARROWHEAD RESEARCH CORPORATION**, a Delaware corporation (the "**Company**"), and have represented the Company in connection with that certain Purchase Agreement, dated as of October 20, 2011 (the "**Purchase Agreement**"), entered into by and between the Company and Lincoln Park Capital Fund, LLC (the "**Buyer**") pursuant to which the Company has agreed to issue to the Buyer shares of the Company's Common Stock, par value \$0.001 per share (the "**Common Stock**"), in an amount up to Fifteen Million dollars (\$15,000,000) (the "**Purchase Shares**"), in accordance with the terms of the Purchase Agreement. In connection with the transactions contemplated by the Purchase Agreement, the Company has registered with the U.S. Securities & Exchange Commission the following shares of Common Stock:

- (1) shares of Common Stock to be issued upon purchase from the Company by the Buyer from time to time (the "**Purchase Shares**").
- (2) 689,258 shares of Common Stock which have been issued to the Buyer as a commitment fee (the "**Initial Commitment Shares**").
- (3) 886,189 additional Commitment Shares to be issued in connection with each purchase of Purchase Shares (the "**Additional Commitment Shares**" and together with the Initial Commitment Shares, the "**Commitment Shares**").

Pursuant to the Purchase Agreement, the Company also has entered into a Registration Rights Agreement, dated as of October 20, 2011, with the Buyer (the "**Registration Rights Agreement**") pursuant to which the Company agreed, among other things, to register the Purchase Shares and the Commitment Shares under the Securities Act of 1933, as amended (the "**Securities Act**"). In connection with the Company's obligations under the Purchase Agreement and the Registration Rights Agreement, on October , 2011, the Company filed a Registration Statement (File No. 333-) (the "**Registration Statement**") with the Securities and Exchange Commission (the "**SEC**") relating to the sale of the Purchase Shares and the Commitment Shares.

In connection with the foregoing, we advise you that a member of the SEC's staff has advised us by telephone that the SEC has entered an order declaring the Registration Statement effective under the Securities Act at P.M. on , 2011 and we have no knowledge, after telephonic inquiry

of a member of the SEC's staff, that any stop order suspending its effectiveness has been issued or that any proceedings for that purpose are pending before, or threatened by, the SEC and the Purchase Shares and the Commitment Shares are available for sale under the Securities Act pursuant to the Registration Statement and may issued without any restrictive legend.

Very truly yours,
[Company Counsel]

By: _____

cc: Lincoln Park Capital Fund, LLC

EXHIBIT B

TO REGISTRATION RIGHTS AGREEMENT

**Information About The Investor Furnished To The Company By The Investor
Expressly For Use In Connection With The Registration Statement**

As of the date of the Purchase Agreement, Lincoln Park Capital Fund, LLC, beneficially owned no shares of common stock of the Company. Josh Scheinfeld and Jonathan Cope, the Managing Members of Lincoln Park Capital, LLC, are deemed to be beneficial owners of all of the shares of common stock owned by Lincoln Park Capital Fund. Messrs. Cope and Scheinfeld have shared voting and investment power over the shares being offered under the prospectus filed with the SEC in connection with the transactions contemplated under the Purchase Agreement. Lincoln Park Capital is not a licensed broker dealer or an affiliate of a licensed broker dealer.

SERIES A PREFERRED SUBSCRIPTION AGREEMENT

This Series A Preferred Subscription Agreement (this "**Agreement**") is made and entered into as of October , 2011 by and among Arrowhead Research Corporation, a Delaware corporation (the "**Company**"), and the undersigned hereto (each a "**Purchaser**" and together the "**Purchasers**"). Certain terms used and not otherwise defined in the text of this Agreement are defined in Section 10 hereof.

RECITALS

WHEREAS, the Company and the Purchasers are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(2) of the Securities Act of 1933, as amended (the "**Securities Act**"), Rule 506 of Regulation D ("**Regulation D**") and/or Regulation S ("**Regulation S**"), each as promulgated by the United States Securities and Exchange Commission (the "**Commission**") under the Securities Act;

WHEREAS, the Company desires to sell to the Purchasers, and the Purchasers desire to purchase from the Company shares of Series A Convertible Preferred Stock (the "**Preferred Stock**"), in accordance with the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the mutual representations, warranties and covenants herein contained, the parties hereto hereby agree as follows:

1. Subscription; Payment. The Purchaser, intending to be legally bound under this Agreement, hereby irrevocably agrees to purchase from the Company, the number of shares of Preferred Stock set forth on the signature page attached hereto (the "**Shares**") for an aggregate purchase price equal to \$[] (the "**Capital Commitment**"). This Subscription is submitted to the Purchaser in accordance with and subject to the terms and conditions described in this Agreement.

Purchaser shall either: (i) enclose herewith a certified or official bank check payable to the Company or (ii) transmit by wire transfer the amount of the Capital Commitment. The Company shall deposit all proceeds received for the Subscription in an account at Citizens Business Bank, pending acceptance of the Subscription.

2. Acceptance of Subscription; Closing. The Purchaser understands and agrees that the Company in its sole discretion reserves the right to accept or reject this or any other subscription in whole or in part, notwithstanding prior receipt by Purchaser of notice of acceptance. If this subscription ("**Subscription**") is rejected by the Company in whole or in part, the Company shall promptly return all funds received from the Purchaser without interest or deduction and this Agreement shall thereafter be of no further force or effect. If the Subscription is accepted in whole or in part, the Company shall notify the Purchaser of the date(s) of the closing of the purchase and sale of Shares (each, a "**Closing**"), which Closing shall occur after the close of market at the offices of the Company.

Promptly after the Closing, the Company shall deliver to the Investor one or more stock certificates evidencing the number of Shares the Investor is purchasing pursuant to the Subscription.

3. **Representations and Warranties of the Purchasers.** Each Purchaser, severally but not jointly, represents and warrants to the Company that the statements contained in this Section 3 are true and complete as of the date of this Agreement and will be true and complete as of the date of the Closing:

3.1. **Organization.** The Purchaser represents that the Purchaser is either an individual or an entity duly formed, validly existing and in good standing under the laws of the jurisdiction of its organization, has not been organized, reorganized or recapitalized specifically for the purpose of investing in the Company and has all corporate, partnership, limited liability or similar power and authority, as applicable, to enter into this Agreement and the instruments referred to herein to which it is a party and to consummate the transactions contemplated hereby and thereby.

3.2. **Validity.** The execution, delivery and performance of this Agreement and the instruments referred to herein, in each case to which the Purchaser is a party, and the consummation by the Purchaser of the transactions contemplated hereby and thereby, have been duly authorized by all necessary corporate, partnership, limited liability or similar actions, as applicable, on the part of such Purchaser. This Agreement has been duly executed and delivered by the Purchaser, and the instruments referred to herein to which it is a party will be duly executed and delivered by the Purchaser, and each such agreement and instrument constitutes or will constitute a valid and binding obligation of the Purchaser, enforceable against it in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

3.3. **Brokers.** There is no broker, investment banker, financial advisor, finder or other Person which has been retained by or is authorized to act on behalf of the Purchaser who might be entitled to any fee or commission for which the Company will be liable in connection with the execution of this Agreement and the consummation of the transactions contemplated hereby.

3.4. **Investment Representations and Warranties.** The Purchaser understands and agrees that the offering and sale of the Shares has not been registered under the Securities Act or any applicable state securities laws and is being made in reliance upon federal and state exemptions for transactions not involving a public offering which depend upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser's representations as expressed herein.

3.5. **Acquisition for Own Account.** The Purchaser is acquiring the Shares for its own account for investment and not with a view toward distribution in a manner which would violate the Securities Act or any applicable state securities laws.

3.6. **Ability to Protect Its Own Interests and Bear Economic Risks.** The Purchaser, by reason of the business and financial experience of its management, has the capacity to protect its own interests in connection with the transactions contemplated by this Agreement and is capable of evaluating the merits and risks of the investment in the Shares. The

Purchaser is able to bear the economic risk of an investment in the Shares and is able to sustain a loss of all of its investment in the Shares without economic hardship, if such a loss should occur.

3.7. Accredited Investor. The Purchaser is an “accredited investor” as that term is defined in Regulation D promulgated under the Securities Act.

3.8. Access to Information. The Purchaser has had adequate opportunity to ask questions of, and receive answers from, the Company’s officers, employees, agents, accountants, and representatives concerning the Company’s business, operations, financial condition, assets, liabilities, and all other matters relevant to its investment in the Shares. Purchaser understands that an investment in the Shares bears significant risk and represents that it has reviewed the SEC Reports (as defined herein), which serve to qualify the Company representations set forth in this Agreement.

3.9. Restricted Securities. The Purchaser understands that the Shares will be characterized as “restricted securities” under the federal securities laws inasmuch as they are being acquired from the Company in a private placement under Section 4(2) of the Securities Act and that under such laws and applicable regulations the Shares may be resold without registration under the Securities Act only in certain limited circumstances. The Purchaser acknowledges that the Shares must be held indefinitely unless subsequently registered under the Securities Act and under applicable state securities laws or an exemption from such registration is available. The Purchaser understands that the Company is under no obligation to register the Shares, except as provided in this Agreement. The Purchaser is aware of the provisions of Rule 144 under the Securities Act (“**Rule 144**”) which permit limited resale of securities purchased in a private placement.

3.10. Tax Advisors. The Purchaser has had the opportunity to review with the Purchaser’s own tax advisors the federal, state and local tax consequences of this investment, where applicable, and the transactions contemplated by this Agreement. The Purchaser is relying solely on the Purchaser’s own determination as to tax consequences or the advice of such tax advisors and not on any statements or representations of the Company or any of its agents and understands that the Purchaser (and not the Company) shall be responsible for the Purchaser’s own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

3.11. Short Sales, etc. Purchaser represents, warrants and covenants to the Company that Purchaser has not, either directly or indirectly through an affiliate, agent or representative of the Company, engaged in any transaction in the securities of the Company during the thirty (30) days prior to the date that the Purchaser first learned of the proposed offering of the Shares. Purchaser represents and warrants to and covenants with the Company that Purchaser will not engage in any short sales of the Company’s common stock, \$0.001 par value per share (the “**Common Stock**”) prior to the earlier of (i) the effectiveness of the Registration Statement (either directly or indirectly through an affiliate, agent or representative) and (ii) the date as of which the Purchaser may sell any of the Shares pursuant to Rule 144 or Regulation S, as applicable, each as promulgated under the Securities Act and only to the extent permitted under the Securities Act.

3.12. Foreign Purchaser Representations. To the extent applicable, Purchasers who are identified on the signature page hereto as not a “U.S. Purchaser” shall also make the representations, warranties and covenants set forth on Annex A attached hereto.

4. Representations and Warranties by the Company. Except as set forth in the SEC Reports or as may be disclosed by the Company in a written Disclosure Schedule provided by the Company to the Purchasers dated the date hereof (the “**Disclosure Schedule**”), the Company represents and warrants to the Purchasers that the statements contained in this Section 4 are true and complete as of the date of this Agreement and will be true and complete as of the date of the Closing, as the case may be. The SEC Reports are incorporated herein by reference and serve to qualify the Company’s representations and warranties, to the extent applicable. Accordingly, Purchasers are urged to review the SEC Reports before making an investment decision regarding the purchase of the Shares.

4.1. Capitalization. As of the date hereof, without giving effect to the Closing, the authorized capital stock of the Company consists of 145,000,000 shares of Common Stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share (“**Preferred Stock**”). As of the date hereof, there are: (i) 87,804,443 shares of Common Stock issued and outstanding, (ii) no shares of Preferred Stock issued and outstanding, and (iii) up to 31,640,991 shares of Common Stock reserved for issuance upon exercise of options, warrants and other rights to acquire Common Stock outstanding as of the date hereof. All of the outstanding shares of capital stock of the Company have been validly issued and are fully paid and non-assessable.

4.2. Subsidiaries. The Majority Subsidiaries of the Company are: Calando Pharmaceuticals, Inc., a Delaware corporation, Tego Biosciences Corporation, a Delaware corporation, and Ablaris Therapeutics, Inc., a Delaware corporation (each a “Subsidiary” and collectively, the “Subsidiaries”). The Company owns voting securities representing less than a majority of the outstanding voting securities issued by the following companies: Nanotope, Inc., a Delaware corporation, and Leonardo Biosystems, Inc., a Delaware corporation, each as described in the SEC Reports.

4.3. Organization. Each of the Company and the Subsidiaries (a) is duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its formation, (b) is duly qualified to do business as a foreign entity and is in good standing in each jurisdiction where the nature of the property owned or leased by it or the nature of the business conducted by it makes such qualification necessary, except where the failure to be so qualified would not have a Material Adverse Effect, and (c) has all requisite corporate power and authority to own or lease and operate its assets and carry on its business as presently being conducted.

4.4. Consents. Neither the execution, delivery or performance of this Agreement by the Company, nor the consummation by it of the obligations and transactions contemplated hereby or thereby (including, without limitation, the issuance, the reservation for issuance and the delivery of the Shares) requires any consent of, authorization by, exemption from, filing with or notice to any Governmental Entity or any other Person, other than filings required under applicable U.S. federal and state securities laws.

4.5. Authorization; Enforcement. The Company has all requisite corporate power and has taken all necessary corporate action required for the due authorization, execution, delivery and performance by the Company of this Agreement and the consummation of the transactions contemplated hereby and thereby (including, without limitation, the issuance of the Shares and the provision to the Purchaser of the rights contemplated by this Agreement) and no action on the part of the stockholders of the Company is required. The execution, delivery and performance by the Company of this Agreement and the consummation by the Company of the transactions contemplated hereby and thereby, have been duly authorized by all necessary corporate action on the part of the Company. This Agreement has been duly executed and delivered by the Company, and the instruments referred to herein to which it is a party will be duly executed and delivered by the Company, and each such agreement constitutes or will constitute a legal, valid and binding obligation of the Company enforceable against it in accordance with its terms, except to the extent that enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

4.6. Valid Issuance of Shares. The Shares have been duly and validly authorized and, when issued and paid for pursuant to this Agreement, the Shares will be validly issued, fully paid and non-assessable, and the Shares shall be free and clear of all Encumbrances. Each share of Preferred Stock shall have the rights, preferences, privileges and restrictions set forth in the Certificate of Designations.

4.7. No Conflicts. Except as specifically contemplated herein, the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated hereby and thereby (including, without limitation, the issuance and reservation for issuance, as applicable, of the Shares) will not (a) result in a violation of the certificate of incorporation, as amended, and the by-laws of the Company (the “**Charter Documents**”), (b) conflict with or result in the breach of the terms, conditions or provisions of or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give rise to any right of termination, acceleration or cancellation under, any material agreement, lease, mortgage, license, indenture, instrument or other contract to which the Company or any Subsidiary is a party, (c) result in a violation of any law, rule, regulation, order, judgment or decree (including, without limitation, U.S. federal and state securities laws and regulations) applicable to the Company or any Subsidiary or by which any property or asset of the Company or any Subsidiary is bound or affected, (d) result in a material violation of any rule or regulation of FINRA or its Trading Markets, or (e) result in the creation of any Encumbrance upon any of the assets of the Company or any Subsidiary. The Company and the Subsidiaries are not in violation of their respective Charter Documents, and the Company and the Subsidiaries are not in default (and no event has occurred which, with notice or lapse of time or both, would cause them to be in default) under, nor has there occurred any event giving others (with notice or lapse of time or both) any rights of termination, amendment, acceleration or cancellation of, any material agreement, indenture or instrument to which the Company or any Subsidiary is a party. The business of the Company and the Subsidiaries is not being conducted in violation of any law, ordinance or regulation of any Governmental Entity, except where the violation would not result in a Material Adverse Effect.

4.8. No General Solicitation. Neither the Company, nor any of its Affiliates or any other Person acting on the Company’s behalf, has directly or indirectly engaged in any form of general solicitation or general advertising with respect to the Shares, nor have any of such Persons made any offers or sales of any security of the Company or its Affiliates or solicited any offers to buy any security of the Company or its Affiliates under circumstances that would require registration of the Shares under the Securities Act.

4.9. Financial Statements.

(a) The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, since October 1, 2010 (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the “**SEC Reports**”) on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied as to form in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. All agreements to which the Company is a party or to which the property or assets of

the Company are subject, which are required to be described in or filed as exhibits to an SEC Report, have been so described or filed.

(b) The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with GAAP, except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present the financial position of the Company as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

4.10. Absence of Litigation. There is no claim, action, suit, arbitration, investigation or other proceeding pending against, or to the knowledge of the Company, threatened against or affecting, the Company, any Subsidiary or any of their respective properties or, to the knowledge of the Company, any of their respective officers or directors before any Governmental Entity.

4.11. Taxes. The Company and the Subsidiaries have properly filed all federal, foreign, state, local, and other tax returns and reports which are required to be filed by them, which returns and reports were properly completed and are true and correct in all material respects, and all taxes, interest, and penalties due and owing have been timely paid. There are no outstanding waivers or extensions of time with respect to the assessment or audit of any tax or tax return of the Company or any Subsidiary, or claims now pending or matters under discussion between the Company or any Subsidiary and any taxing authority in respect of any tax of the Company. The Company has no material uncertain tax positions pursuant to FASB Interpretation 48 (FIN 48), *Accounting for Uncertainty in Income Taxes*.

4.12. Employee Matters. The Company has disclosed in the SEC Reports any "employee benefit plan" subject to the Employee Retirement Income Security Act of 1974, as amended ("*ERISA*"), that it maintains for employees. No director or officer or other employee of the Company or any Subsidiary will become entitled to any retirement, severance, change of control, or similar benefit or enhanced or accelerated benefit (including any acceleration of vesting) or lapse of repurchase rights or obligations with respect to any employee benefit plan subject to ERISA or other benefit under any compensation plan or arrangement of the Company or any Subsidiary as a result of the transactions contemplated in this Agreement.

4.13. Compliance with Laws.

(a) The Company and each Subsidiary has been and is in material compliance with the terms of, all franchises, permits, licenses and other rights and privileges necessary to conduct their respective present and proposed businesses and each is in compliance with and has not violated, in any material respect, (i) any judgments, orders, decrees, injunctions or writs applicable to the Company or Subsidiary, or (ii) any applicable provisions of any laws, statutes, ordinances,

rules or regulations applicable to the conduct of their respective business, including the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any drug or drug candidate under development, manufactured or distributed by the Company or any Subsidiary (collectively, "**Applicable Laws**").

(b) The Company and the Subsidiaries:

(i) have not received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the U.S. Food and Drug Administration (the "**FDA**") or any other federal, state, local or foreign governmental or regulatory authority alleging or asserting material noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws ("**Authorizations**");

(ii) possess all material Authorizations and such Authorizations are valid and in full force and effect and the Company or the Subsidiary, as applicable, is not in material violation of any term of any such Authorizations;

(iii) have not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from the FDA or any other federal, state, local or foreign governmental or regulatory authority or third party alleging that any product operation or activity is in material violation of any Applicable Laws or Authorizations and has no knowledge that the FDA or any other federal, state, local or foreign governmental or regulatory authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding;

(iv) have not received notice that the FDA or any other federal, state, local or foreign governmental or regulatory authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any material Authorizations and has no knowledge that the FDA or any other federal, state, local or foreign governmental or regulatory authority is considering such action;

(v) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission); and

(vi) have not, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, “dear doctor” letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company’s knowledge, no third party has initiated, conducted or intends to initiate any such notice or action.

(c) The studies, tests and preclinical and clinical trials conducted by or on behalf of the Company and the Subsidiaries were and, if still pending, are being conducted in accordance with experimental protocols, procedures and controls pursuant to accepted professional scientific standards and all Applicable Laws and Authorizations, including, without limitation, the Federal Food, Drug and Cosmetic Act and the rules and regulations promulgated thereunder (collectively, “**FDCA**”); the descriptions of the results of such studies, tests and trials contained in the SEC Reports are accurate and complete in all material respects and fairly present in all material respects the data derived from such studies, tests and trials; the Company is not aware of any studies, tests or trials, the results of which the Company believes reasonably call into question the study, test, or trial results described or referred to in the SEC Reports when viewed in the context in which such results are described and the clinical state of development; and, since October 1, 2010, the Company and the Subsidiaries have not received any notices or correspondence from the FDA or any other federal, state, local or foreign governmental or regulatory authority requiring the termination, suspension or material modification of any of the foregoing studies, tests or preclinical or clinical trials.

4.14. Intellectual Property Matters.

(a) “**Intellectual Property**” means any and all of the following arising under the laws of the United States, any other jurisdiction or any treaty regime: (i) all inventions (whether patentable or unpatentable and whether or not reduced to practice), all improvements thereon, and all patents, patent applications and patent disclosures, together with all reissues, continuations, continuations-in-part,

revisions, extensions and reexaminations thereof, (ii) all trademarks, service marks, trade dress, logos, trade names and corporate names, together with all translations, adaptations, derivations and combinations thereof and including all goodwill associated therewith, and all applications, registrations and renewals in connection therewith, (iii) all copyrightable works, all copyrights and all applications, registrations and renewals in connection therewith, (iv) all trade secrets and confidential business information (including, without limitation, ideas, research and development, know-how, formulas, compositions, manufacturing and production processes and techniques, technical data, designs, drawings, specifications, customer and supplier lists, pricing and cost information and business and marketing plans and proposals), (v) all computer software (including, without limitation, data and related documentation and except for any commercial “shrink-wrapped” software) and source codes (other than open source codes), (vi) all other proprietary rights, (vii) all copies and tangible embodiments of the foregoing (in whatever form or medium) and (viii) all licenses or agreements in connection with the foregoing. “**Company Intellectual Property**” means all Intellectual Property which is used in connection with, and is material to, the business of the Company and the Subsidiaries and all Intellectual Property owned by the Company or any Subsidiary, provided that any Intellectual Property that is licensed by the Company or any Subsidiary shall be included within the meaning of Company Intellectual Property only within the scope of use by the Company or the Subsidiary, as applicable, or in connection with the Company’s or Subsidiary’s business.

(b) With respect to each item of Company Intellectual Property that is material to the business of the Company or any Subsidiary:

(i) The Company or such Subsidiary possesses all rights, titles and interests in and to the item if owned by the Company or such Subsidiary, as applicable, free and clear of any Encumbrance, license or other restriction, and possesses all rights necessary in the case of a licensed item to use such item in the manner in which it presently uses the item or reasonably contemplates using such item, and the Company or such Subsidiary has taken or caused to be taken reasonable and prudent steps to protect its rights in and to, and the validity and enforceability of, the item owned by the Company or such Subsidiary;

(ii) no action, suit, proceeding, hearing, investigation, charge, complaint, claim or demand is pending that challenges the legality, validity, enforceability, use or ownership of the item;

(iii) to the knowledge of the Company, the item, if owned by the Company or such Subsidiary, does not

infringe upon any valid and enforceable Intellectual Property right or other right of any third party;

(iv) to the knowledge of the Company, no third party has infringed upon or misappropriated the intellectual property rights held by the Company or such Subsidiary in the item; and

(v) each option, license, sublicense or agreement of any kind covering the item is legal, valid, binding, enforceable and in full force and effect.

(c) All registered patents, copyrights, trademarks and service marks included in the Company Intellectual Property are, to the knowledge of the Company, valid and subsisting and are not subject to any claims, Encumbrances, taxes or other fees except for periodic filing, annuity and maintenance fees and Permitted Liens.

4.15. Title to Property and Assets. The Company does not own any real property. The Company and each Subsidiary owns or has legally enforceable rights to use or hold for use its personal property and assets free and clear of all Encumbrances except: (i) Permitted Liens and (ii) such other Encumbrances, if any, that individually or in the aggregate, do not and would not detract from the value of any asset or property of the Company or such Subsidiary or interfere with the use or contemplated use of any personal property of the Company or such Subsidiary. With respect to any real property, the Company and each Subsidiary is not in violation in any material respect of any of its leases.

4.16. Disclosure. The Company understands and confirms that the Purchaser will rely on the foregoing representations in effecting transactions in securities of the Company. No representation or warranty by the Company contained in this Agreement contains any untrue statement of a material fact or omits to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The Company acknowledges and agrees that the Purchaser does not make and has not made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

4.17. Absence of Changes. Since the date of the latest financial statements included in the SEC Reports and except as contemplated by, or in connection with, this Agreement, there has not been any Material Adverse Effect or any event or events that individually or in the aggregate would reasonably be expected to have a Material Adverse Effect.

4.18. Accountants. Rose, Snyder & Jacobs ("**RSJ**"), who expressed their opinion with respect to the financial statements included in the SEC Reports, are independent accountants as required by the Securities Act and the rules and regulations promulgated thereunder. There are no disagreements of any kind presently existing, or reasonably anticipated by the Company to arise, between the Company and RSJ.

4.19. Authorization of Certificate of Designations. The Certificate of

Designations has been duly and validly authorized by the Company and, when filed by the Company with the Secretary of the State of Delaware, will be in full force and effect.

5. Covenants.

5.1. Best Efforts. Each party shall use its best efforts to timely satisfy each of the conditions to be satisfied by it as provided in Section 6 of this Agreement.

5.2. Blue Sky. The Company shall, on or before the Closing Date, take such action as the Company shall reasonably determine is necessary in order to obtain an exemption for or to qualify the Shares for sale to the Purchasers at the Closing pursuant to this Agreement under applicable securities or "blue sky" laws of the states of the United States (or to obtain an exemption from such qualification), and shall, at the request of any Purchaser, provide evidence of any such action so taken to such Purchaser(s) on or prior to the Closing Date. The Company shall make all filings and reports relating to the offer and sale of the Shares by the Company, as may be required under applicable securities or "blue sky" laws of the states of the United States following the Closing Date.

5.3. Reporting Status. Until the first anniversary of the Closing, (the "**Reporting Period**"), the Company shall file all reports required to be filed with the Commission pursuant to the Exchange Act or the rules and regulations thereunder.

5.4. Use of Proceeds. The Company will use the proceeds from the sale of the Shares for general corporate purposes, including research and development, sales, marketing, working capital, general and administrative expenses and strategic and business development opportunities.

6. Conditions of Parties' Obligations.

6.1. Conditions of the Purchasers' Obligations at the Closing. The obligations of the Purchasers under Section 1 hereof are subject to the fulfillment, prior to the Closing, of all of the following applicable conditions, any of which may be waived in whole or in part by the Purchasers in their absolute discretion. If the following conditions are not satisfied on or before October 31, 2011, then any Purchaser may terminate this Agreement with respect to that particular Purchaser upon providing written notice to the Company.

(a) Representations and Warranties. The representations and warranties of the Company contained in this Agreement and in any certificate, if any, or other writing, if any, delivered by the Company pursuant hereto shall be true and correct on and as of the Closing Date with the same effect as though such representations and warranties had been made on and as of the Closing Date (except to the extent expressly made as of an earlier date in which case as of such earlier date).

(b) Performance. The Company shall have filed the Certificate of Designations with the Delaware Secretary of State and shall have performed and complied in all material respects with all agreements, obligations and conditions

contained in this Agreement that are required to be performed or complied by it on or before the Closing Date.

(c) Qualification Under State Securities Laws. All registrations, qualifications, permits and approvals, if any, required under applicable state securities laws shall have been obtained for the lawful execution, delivery and performance of this Agreement.

(d) Consents and Waivers. The Company shall have obtained all consents or waivers necessary to execute and perform its obligations under this Agreement. All corporate and other action and governmental filings necessary to effectuate the terms of this Agreement and other agreements and instruments executed and delivered by the Company in connection herewith shall have been made or taken, and no Material Adverse Effect has occurred with respect to the operation of the Company's business.

(e) No Material Adverse Effect. There shall have been no Material Adverse Effect with respect to the Company since the date of the latest audited balance sheet of the Company included in the SEC Reports.

6.2. Conditions of the Company's Obligations. The obligations of the Company under Section 1 hereof are subject to the fulfillment prior to or on the Closing Date of all of the following conditions, any of which may be waived in whole or in part by the Company: (i) each Purchaser at the Closing shall have performed all of its obligations hereunder required to be performed by it at or prior to the Closing, and (ii) the representations and warranties of the Purchasers at the Closing contained in this Agreement shall be true and correct at and as of the Closing as if made at and as of the Closing (except to the extent expressly made as of an earlier date, in which case as of such earlier date). If the foregoing conditions are not satisfied on or before October 31, 2011, then the Company may terminate this Agreement upon providing written notice to the Purchasers.

7. Transfer Restrictions; Restrictive Legend.

7.1. Transfer Restrictions. The Purchasers understand that the Company may, as a condition to the transfer of any of the Shares or the Registrable Securities (collectively, the "Securities"), require that the request for transfer be accompanied by an opinion of counsel reasonably satisfactory to the Company, to the effect that the proposed transfer does not result in a violation of the Securities Act, unless such transfer is covered by an effective registration statement or by Rule 144 or Rule 144A under the Securities Act (or, solely with respect to non-U.S. Persons, is permitted under Regulation S); provided, however, that an opinion of counsel shall not be required for a transfer by a Purchaser that is (A) a partnership transferring to its partners or former partners in accordance with partnership interests, (B) a corporation transferring to a wholly owned subsidiary or a parent corporation that owns all of the capital stock of such Purchaser, (C) a limited liability company transferring to its members or former members in accordance with their interest in the limited liability company, (D) an individual transferring to such Purchaser's family member or trust for the benefit of an individual Purchaser, (E) transferring its Securities to any Affiliate of such Purchaser, in the case of an institutional investor, or other Person under common management with such Purchaser, or (F) a transfer that is made pursuant to a bona fide gift to a third party; provided, further, that (i) the transferee in each case agrees to be subject to the restrictions in this Section 7 and provides the Company with a representation letter containing substantially the same representations and warranties in Sections 3.3 through 3.10 hereof, (ii) the Company satisfies itself that the number of transferees is sufficiently limited and (iii) in the case of transferees that are partners or limited liability company members, the transfer is for no consideration. It is understood that the certificates evidencing any Securities may bear substantially the following legends (in addition to any other legends as legal counsel for the Company deems necessary or advisable under the applicable state and federal securities laws or any other agreement to which the Company is a party):

"THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 OR ANY APPLICABLE STATE SECURITIES LAWS. THEY MAY NOT BE SOLD, OFFERED FOR SALE, PLEDGED OR HYPOTHECATED IN THE ABSENCE OF A REGISTRATION STATEMENT IN EFFECT WITH RESPECT TO THE SECURITIES UNDER SUCH ACT OR APPLICABLE STATE SECURITIES LAWS OR AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED OR UNLESS SOLD PURSUANT TO RULE 144 OR RULE 144A OF SUCH ACT."

7.2. Unlegended Certificates. The Company shall be obligated to reissue unlegended certificates at the request of any holder thereof promptly following such request if (a) the holder shall have obtained an opinion of counsel reasonably acceptable to the Company to the effect that, or the Company is otherwise satisfied that, the Securities proposed to be disposed of may lawfully be so disposed of without registration, qualification or legend, or (b) the Securities represented by the certificate containing the foregoing legend have been registered for resale as contemplated in Section 8 of this Agreement, in which case the removal shall be predicated on the undertaking by such Purchaser that the Securities will only be sold pursuant to such registration statement(s) or an available exemption from registration.

8. Registration Rights of Purchasers.

8.1. Mandatory Registration. The Company shall prepare and file with the Commission within 30 days after the date of the Automatic Conversion (the "**Filing Deadline**") a Registration Statement under the Securities Act on appropriate form covering the resale of the full amount of the shares of Common Stock underlying the Preferred Stock (the "**Registrable Securities**"). The Company shall use commercially reasonable efforts to have the Registration Statement declared effective within 180 days after the date of the Filing Deadline.

8.2. Limitation on Registrable Securities. In the event that the staff of the Commission (the "**Staff**") determines that the full amount of the Registrable Securities cannot be registered on the Registration Statement due to limitations under Rule 415 of the Securities Act ("**Rule 415**"), then Company shall: (i) register the resale of that portion of the Registrable Securities as the Staff may permit under its interpretations of Rule 415, and (ii) undertake to register the remaining portion of the Registrable Securities as soon as registration would be permitted under Rule 415, as determined by the Company in good faith based on the Staff's publicly available interpretations of Rule 415.

8.3. Related Obligations. At such time as the Company is obligated to file a Registration Statement with the Commission pursuant to Section 8.1 hereof, the Company will use commercially reasonable efforts to effect the registration of the Registrable Securities in accordance with the intended method of disposition thereof and, pursuant thereto, the Company shall have the following obligations:

(a) The Company shall keep each Registration Statement effective pursuant to Rule 415 at all times until the earlier of (i) the date as of which the Purchasers may sell all of the Registrable Securities covered by such Registration Statement without restriction or limitation pursuant to Rule 144 or Regulation S, to the extent a Purchaser is not a U.S. Person as of the Closing, and without the requirement to be in compliance with Rule 144(c) (1) (or any successor thereto) promulgated under the Securities Act or (ii) the date on which the Purchasers shall have sold all of the Registrable Securities covered by such Registration Statement (the "**Registration Period**"). The Company shall ensure that each Registration Statement (including any amendments or supplements thereto and prospectuses contained therein) shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein (in the case of prospectuses, in the light of the circumstances in which they were made) not misleading.

(b) The Company shall prepare and file with the Commission such amendments (including post-effective amendments) and supplements to a Registration Statement and the prospectus used in connection with such Registration Statement, which prospectus is to be filed pursuant to Rule 424 promulgated under the Securities Act, as may be necessary to keep such Registration Statement effective at all times during the Registration Period, and, during such period, comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities of the Company covered by such

Registration Statement until such time as all of such Registrable Securities shall have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof as set forth in such Registration Statement.

(c) The Company shall notify the Purchasers in writing of the happening of any event, as promptly as practicable after becoming aware of such event, as a result of which the prospectus included in a Registration Statement, as then in effect, includes an untrue statement of a material fact or omission to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading (provided that in no event shall such notice contain any material, nonpublic information), and, promptly prepare a supplement or amendment to such Registration Statement to correct such untrue statement or omission, and deliver 10 copies of such supplement or amendment to the Purchasers (or such other number of copies as the Purchasers may reasonably request). The Company shall also promptly notify the Purchasers in writing (i) when a prospectus or any prospectus supplement or post-effective amendment has been filed, and when a Registration Statement or any post-effective amendment has become effective (notification of such effectiveness shall be delivered to the Purchasers by facsimile on the same day of such effectiveness and by overnight mail), (ii) of any request by the Commission for amendments or supplements to a Registration Statement or related prospectus or related information, and (iii) of the Company's reasonable determination that a post-effective amendment to a Registration Statement would be appropriate.

(d) The Company shall use commercially reasonable efforts to prevent the issuance of any stop order or other suspension of effectiveness of a Registration Statement, or the suspension of the qualification of any of the Registrable Securities for sale in any jurisdiction and, if such an order or suspension is issued, to obtain the withdrawal of such order or suspension at the earliest possible moment and to notify the Purchaser who holds Registrable Securities being sold of the issuance of such order and the resolution thereof or its receipt of notice of the initiation or threat of any proceeding for such purpose.

(e) If requested by a Purchaser, the Company shall (i) as soon as practicable incorporate in a prospectus supplement or post-effective amendment such information as the Purchaser reasonably requests to be included therein relating to the sale and distribution of Registrable Securities, including, without limitation, information with respect to the number of Registrable Securities being offered or sold, the purchase price being paid therefor and any other terms of the offering of the Registrable Securities to be sold in such offering; (ii) as soon as practicable make all required filings of such prospectus supplement or post-effective amendment after being notified of the matters to be incorporated in such prospectus supplement or post-effective amendment; and (iii) as soon as practicable, supplement or make amendments to any Registration Statement if reasonably requested by the Purchaser.

(f) Notwithstanding anything to the contrary herein, at any time after the Effective Date, the Company may delay the disclosure of material, non-public information concerning the Company the disclosure of which at the time is not, in the good faith opinion of the Board of Directors and its counsel, in the best interest of the Company and, in the opinion of counsel to the Company, otherwise required (a “**Grace Period**”); provided, that the Company shall promptly (i) notify the Purchasers in writing of the existence of material, non-public information giving rise to a Grace Period (provided that in each notice the Company will not disclose the content of such material, non-public information to the Purchasers) and the date on which the Grace Period will begin, and (ii) notify the Purchasers in writing of the date on which the Grace Period ends; and, provided further, that the Grace Periods shall not exceed an aggregate of 60 Business Days during any 365-day period (each, an “**Allowable Grace Period**”). For purposes of determining the length of a Grace Period above, the Grace Period shall begin on and include the date the Purchasers receive the notice referred to in clause (i) and shall end on and include the later of the date the Purchasers receive the notice referred to in clause (ii) and the date referred to in such notice. The requirements of Section 8 hereof shall not be applicable during the period of any Allowable Grace Period. Upon expiration of the Grace Period, the Company shall again be bound by the requirements of Section 8 with respect to the information giving rise thereto unless such material, non-public information is no longer applicable.

8.4. Obligations of the Purchasers.

(a) At least two Business Days prior to the first anticipated filing date of a Registration Statement, the Company shall notify each Purchaser in writing of the information the Company requires from such Purchaser in order to have that Purchaser’s Registrable Securities included in such Registration Statement. It shall be a condition precedent to the obligations of the Company to complete the registration pursuant to this Agreement with respect to the Registrable Securities of a particular Purchaser that the Purchaser shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the effectiveness of the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request.

(b) Each Purchaser, by its acceptance of the Registrable Securities, agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of any Registration Statement hereunder, unless the Purchaser has notified the Company in writing of the Purchaser’s election to exclude all of the Purchaser’s Registrable Securities from such Registration Statement.

(c) Each Purchaser agrees that, upon receipt of any notice from the Company of the existence of a Grace Period, the Purchaser will immediately discontinue disposition of Registrable Securities pursuant to any Registration

Statement(s) covering such Registrable Securities until the Purchaser's receipt of the copies of the supplemented or amended prospectus contemplated by Section 8.3(f) or receipt of notice that no supplement or amendment is required.

(d) Each Purchaser covenants and agrees that it will comply with the prospectus delivery requirements of the Securities Act as applicable to it or an exemption therefrom in connection with sales of Registrable Securities pursuant to the Registration Statement.

8.5. Expenses of Registration. All reasonable expenses, other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Section 8, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees, and fees and disbursements of counsel for the Company, shall be paid by the Company.

8.6. Reports under the Exchange Act. With a view to making available to the Purchasers the benefits of Rule 144 promulgated under the Securities Act or any other similar rule or regulation of the Commission that may at any time permit the Purchasers to sell the Shares to the public without registration, the Company agrees to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144, during the Reporting Period;

(b) file with the Commission in a timely manner all reports and other documents required of the Company under the Exchange Act; and

(c) furnish to the Purchasers so long as any Purchaser owns Registrable Securities, promptly upon request during the Reporting Period, (i) a written statement by the Company, if true, that it has complied with the reporting requirements of Rule 144, the Securities Act and the Exchange Act, (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (iii) such other information as may be reasonably requested to permit the Purchasers to sell the Shares pursuant to Rule 144 without registration.

8.7. Assignment of Registration Rights. The rights under this Section 8 shall be automatically assignable by a Purchaser to any transferee of all or any portion of the Purchaser's Registrable Securities if: (i) the Purchaser agrees in writing with the transferee or assignee to assign such rights and a copy of such agreement is furnished to the Company within a reasonable time after such assignment; (ii) the Company is, within a reasonable time after such transfer or assignment, furnished with written notice of (a) the name and address of such transferee or assignee and (b) the securities with respect to which such registration rights are being transferred or assigned; (iii) immediately following such transfer or assignment the further disposition of such securities by the transferee or assignee is restricted under the Securities Act or applicable state securities laws; (iv) at or before the time the Company receives the written notice contemplated by clause (ii) of this sentence the transferee or assignee agrees in writing with the Company to be bound by all of the provisions contained herein; and (v) such transfer shall have been made in accordance with the applicable requirements of this Agreement.

8.8. Indemnification.

(a) Company Indemnification. The Company will indemnify each Purchaser who holds Registrable Securities (if Registrable Securities held by such Purchaser are included in the securities as to which such registration is being effected), each of its officers and directors, partners, members and each person controlling such Purchaser within the meaning of Section 15 of the Securities Act, against all expenses, claims, losses, damages or liabilities (or actions in respect thereof), including any of the foregoing incurred in settlement of any litigation, commenced or threatened, arising out of or based on (A) any untrue statement (or alleged untrue statement) of a material fact contained in any Registration Statement, prospectus, offering circular or other document, or any amendment or supplement thereto, incident to any such Registration Statement, or based on any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances in which they were made, not misleading, or (B) any violation by the Company of the Securities Act, the Exchange Act, state securities laws or any rule or regulation promulgated under such laws applicable to the Company in connection with any such registration, and in each case, the Company will reimburse each such Purchaser, each of its officers and directors, partners, members and each person controlling such Purchaser, for any legal and any other expenses reasonably incurred, as such expenses are incurred, in connection with investigating, preparing or defending any such claim, loss, damage, liability or action, *provided* that the Company will not be liable in any such case to the extent that any such claim, loss, damage, liability or expense arises out of or is based on (X) any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with written information furnished to the Company by an instrument duly executed by such Purchaser or controlling person, and stated to be specifically for use therein, (Y) the use by a Purchaser of an outdated or defective prospectus after the Company has notified such Purchaser in writing that the prospectus is outdated or defective or (Z) a Purchaser's (or any other indemnified person's) failure to send or give a copy of the prospectus or supplement (as then amended or supplemented), if required,

pursuant to Rule 172 under the Securities Act (or any successor rule) to the Persons asserting an untrue statement or alleged untrue statement or alleged untrue statement or omission or alleged omission at or prior to the written confirmation of the sale of Registrable Securities to such person if such statement or omission was corrected in such prospectus or supplement; *provided, further*, that the indemnity agreement contained in this Section 8.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld).

(b) Purchaser Indemnification. Each Purchaser holding Registrable Securities will, if Registrable Securities held by such Purchaser are included in the securities as to which such registration is being effected, severally and not jointly, indemnify the Company, each of its directors and officers, other holders of the Company's securities covered by such Registration Statement, each person who controls the Company within the meaning of Section 15 of the Securities Act, and each such holder, each of its officers and directors and each person controlling such holder within the meaning of Section 15 of the Securities Act, against all claims, losses, damages and liabilities (or actions in respect thereof) arising out of or based on: (A) any untrue statement (or alleged untrue statement) of a material fact contained in any such Registration Statement, prospectus, offering circular or other document, or any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, to the extent, and only to the extent, that such untrue statement (or alleged untrue statement) or omission (or alleged omission) is made in such Registration Statement, prospectus, offering circular or other document in reliance upon and in conformity with written information furnished to the Company by an instrument duly executed by such Purchaser and stated to be specifically for use therein, or (B) any violation by such Purchaser of the Securities Act, the Exchange Act, state securities laws or any rule or regulation promulgated under such laws applicable to such Purchaser, and in each case, such Purchaser will reimburse the Company, each other holder, and directors, officers, persons, underwriters or control persons of the Company and the other holders for any legal or any other expenses reasonably incurred, as such expenses are incurred, in connection with investigating or defending any such claim, loss, damage, liability or action; provided, that the indemnity agreement contained in this Subsection 8.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of such indemnifying Purchaser (which consent shall not be unreasonably withheld or delayed). The liability of any Purchaser for indemnification under this Section 8.8(b) in its capacity as a seller of Registrable Securities shall not exceed the amount of net proceeds to such Purchaser of the securities sold in any such registration.

(c) Notice and Procedure. Each party entitled to indemnification under this Section 8.8 (the "**Indemnified Party**") shall give written notice to the party required to provide indemnification (the "**Indemnifying Party**") promptly after

such Indemnified Party has actual knowledge of any claim as to which indemnity may be sought, and shall permit the Indemnifying Party to assume the defense of any such claim or any litigation resulting therefrom, provided that counsel for the Indemnifying Party, who shall conduct the defense of such claim or litigation, shall be approved by the Indemnified Party (whose approval shall not unreasonably be withheld), and the Indemnified Party may participate in such defense at such party's expense, and provided further that the failure of any Indemnified Party to give notice as provided herein shall not relieve the Indemnifying Party of its obligations under this Agreement unless the failure to give such notice is materially prejudicial to an Indemnifying Party's ability to defend such action and provided further, that the Indemnifying Party shall not assume the defense for matters as to which there is a conflict of interest or there are separate and different defenses. No Indemnifying Party, in the defense of any such claim or litigation, shall, except with the consent of each Indemnified Party (whose consent shall not be unreasonably withheld), consent to entry of any judgment or enter into any settlement which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such Indemnified Party of a release from all liability in respect to such claim or litigation.

(d) Contribution. If the indemnification provided for in this Section 8.8 is held by a court of competent jurisdiction to be unavailable to an Indemnified Party with respect to any losses, claims, damages or liabilities referred to herein, the Indemnifying Party, in lieu of indemnifying such Indemnified Party thereunder, shall to the extent permitted by applicable law contribute to the amount paid or payable by such Indemnified Party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party on the one hand and of the Indemnified Party on the other in connection with the untrue statement or omission that resulted in such loss, claim, damage or liability, as well as any other relevant equitable considerations. The relative fault of the Indemnifying Party and of the Indemnified Party shall be determined by a court of law by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the Indemnifying Party or by the Indemnified Party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission; provided, that in no event shall any contribution by a Purchaser hereunder exceed the proceeds from the offering received by such Purchaser. The amount paid or payable by a party as a result of any loss, claim, damage or liability shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys' or other reasonable fees or expenses incurred by such party in connection with any proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section 8.8 was available to such party in accordance with its terms.

(e) Survival. The obligations of the Company and the Purchasers under this Section 8.8 shall survive completion of any offering of Registrable

Securities in a Registration Statement and the termination of this Agreement. The indemnity and contribution agreements contained in this Section 8.8 are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties and are not in diminution or limitation of other remedies or causes of action that the parties may have under this Agreement.

9. Conversion.

(a) The ability of the Purchasers to convert any portion of the Preferred Shares into shares of Common Stock shall be subject to stockholder approval of such conversion under applicable NASDAQ Marketplace Rules (the "Stockholder Approval"). For the avoidance of doubt, no Purchaser shall have the right to exercise such Purchaser's conversion rights pursuant to Article IV of the Certificate of Designations until the Company receives Stockholder Approval.

(b) The Company shall call a special meeting of stockholders and use reasonable best efforts to obtain Stockholder Approval within 120 days of the date of Closing. Upon receipt of Stockholder Approval, all holders of Preferred Shares shall be deemed to have irrevocably exercised their conversion rights under Article IV of the Certificate of Designations without any further action by the holders, individually or collectively, and all Preferred Shares shall be automatically converted according to their terms, subject to the limitation in Paragraph C of Article IV of the Certificate of Designations, in which case the remaining portion of any Preferred Shares that cannot be so converted will be automatically converted at such time when conversion is permitted under Paragraph C of Article IV of the Certificate of Designations.

10. Definitions. Unless the context otherwise requires, the terms defined in this Section 10 shall have the meanings specified for all purposes of this Agreement.

Except as otherwise expressly provided, all accounting terms used in this Agreement, whether or not defined in this Section 10, shall be construed in accordance with GAAP. If the Company has one or more Subsidiaries, such accounting terms shall be determined on a consolidated basis for the Company and each of its Subsidiaries, and the financial statements and other financial information to be furnished by the Company pursuant to this Agreement shall be consolidated and presented with consolidating financial statements of the Company and each of its Subsidiaries.

"Affiliate" shall have the meaning ascribed to such term in Rule 12b-2 of the General Rules and Regulations under the Exchange Act.

"Business Day" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

"Certificate of Designations" means the Certificate of Designations, Preferences and Rights of Series A Convertible Preferred Stock of the Company, substantially in the form attached hereto as Exhibit A.

“Commission” means the Securities and Exchange Commission.

“Effective Date” means the date the Registration Statement pursuant to Section 8 has been declared effective by the Commission.

“Encumbrances” means a lien, claim, judgment, charge, mortgage, security interest, pledge, escrow, equity or other encumbrance other than restrictions pursuant to any applicable state or federal securities laws.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“FINRA” means the Financial Industry Regulatory Authority.

“GAAP” means U.S. generally accepted accounting principles consistently applied.

“Governmental Entity” means any national, federal, state, municipal, local, territorial, foreign or other government or any department, commission, board, bureau, agency, regulatory authority or instrumentality thereof, or any court, judicial, administrative or arbitral body or public or private tribunal.

“Indebtedness” means (1) all indebtedness for borrowed money, (2) all obligations issued, undertaken or assumed as the deferred purchase price of property or services (including, without limitation, “capital leases” in accordance with GAAP) (other than trade payables entered into in the ordinary course of business), (3) all reimbursement or payment obligations with respect to letters of credit, surety bonds and other similar instruments, (4) all obligations evidenced by notes, bonds, debentures or similar instruments, including obligations so evidenced incurred in connection with the acquisition of property, assets or businesses, (5) all indebtedness created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to any property or assets acquired with the proceeds of such indebtedness (even though the rights and remedies of the seller or bank under such agreement in the event of default are limited to repossession or sale of such property), (6) all monetary obligations under any leasing or similar arrangement which, in connection with GAAP, consistently applied for the periods covered thereby, is classified as a capital lease, and (7) all indebtedness referred to in clauses (1) through (6) above secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any mortgage, lien, pledge, charge, security interest or other encumbrance upon or in any property or assets (including accounts and contract rights) owned by any Person, even though the Person which owns such assets or property has not assumed or become liable for the payment of such indebtedness.

“Knowledge” by a Person of a particular fact or other matter means the following: (a) if the Person is an individual, that such individual is actually aware; and (b) if the Person is an Entity, any executive officer of such Person is actually aware.

“Lien” means any mortgage, lien, pledge, charge, security interest or other similar encumbrance upon or in any property or assets (including accounts and contract rights).

“Majority Subsidiary” means any corporation, association trust, limited liability company, partnership, joint venture or other business association or entity, at least 50% of the outstanding voting securities of which are at the time owned or record by the Company.

“Material Adverse Effect” means any (i) adverse effect on the issuance or validity of the Shares or the transactions contemplated hereby or on the ability of the Company to perform its obligations under this Agreement, or (ii) material adverse effect on the condition (financial or otherwise), properties, assets, liabilities, business or operations of the Company.

“Material Contract” means all written and oral contracts, agreements, deeds, mortgages, leases, subleases, licenses, instruments, notes, commitments, commissions, undertakings, arrangements and understandings which are required to be filed as exhibits by the Company with the Commission pursuant to Items 601(b)(2), 601(b)(4) or 601(b)(10) of Regulation S-K promulgated by the Commission.

“Person” means and includes all natural persons, corporations, business trusts, associations, companies, partnerships, joint ventures, limited liability companies and other entities and governments and agencies and political subdivisions.

“Permitted Liens” means any Lien disclosed in an SEC Report and: (1) any Lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings for which adequate reserves have been established in accordance with GAAP, (2) any statutory Lien arising in the ordinary course of business by operation of law with respect to a liability that is not yet due or delinquent, (3) any Lien created by operation of law, such as materialmen’s liens, mechanics’ liens and other similar liens, arising in the ordinary course of business with respect to a liability that is not yet due or delinquent or that are being contested in good faith by appropriate proceedings, (4) Liens (a) upon or in any equipment acquired or held by the Company or any of its Subsidiaries to secure the purchase price of such equipment or indebtedness incurred solely for the purpose of financing the acquisition or lease of such equipment, or (b) existing on such equipment at the time of its acquisition, provided that the Lien is confined solely to the property so acquired and improvements thereon, and the proceeds of such equipment, (5) Liens incurred in connection with the extension, renewal or refinancing of the indebtedness secured by Liens of the type described in clauses (1) through (4) above, provided that any extension, renewal or replacement Lien shall be limited to the property encumbered by the existing Lien and the principal amount of the Indebtedness being extended, renewed or refinanced does not increase, (7) leases, subleases, licenses and sublicenses granted to others in the ordinary course of the Company’s business, not interfering in any material respect with the business of the Company and its Subsidiaries taken as a whole, and (8) Liens in favor of customs and revenue authorities arising as a matter of law to secure payments of custom duties in connection with the importation of goods.

“Purchaser” has the meaning assigned to it in the introductory paragraph of this Agreement and shall include any Affiliates of the Purchaser.

“Registration Statement” means a registration statement or registration statements of the Company filed under the Securities Act pursuant to Section 8 hereof.

“Required Holders” means Purchasers who purchase, in the aggregate, at least a majority of the total number of Shares offered and sold hereby.

“Trading Market” means the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE Amex Equities, the NASDAQ Capital Market, the NASDAQ Global Market, the NASDAQ Global Select Market, the New York Stock Exchange or the OTC Markets Group Inc.

11. Enforcement.

11.1. Cumulative Remedies. None of the rights, powers or remedies conferred upon the Purchasers on the one hand or the Company on the other hand shall be mutually exclusive, and each such right, power or remedy shall be cumulative and in addition to every other right, power or remedy, whether conferred by this Agreement or now or hereafter available at law, in equity, by statute or otherwise.

11.2. No Implied Waiver. Except as expressly provided in this Agreement, no course of dealing between the Company and the Purchasers or any other holder of shares of Common Stock and no delay in exercising any such right, power or remedy conferred hereby or now or hereafter existing at law in equity, by statute or otherwise, shall operate as a waiver of, or otherwise prejudice, any such right, power or remedy.

12. Confidentiality. Except as otherwise agreed in writing by the Company, each Purchaser agrees that it will use reasonable care to keep confidential and not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company’s intention to file a registration statement), unless the Purchaser can demonstrate that such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 12 by the Purchaser), (b) is or has been made known or disclosed to the Purchaser by a third party without knowledge by the Purchaser of any obligation of confidentiality such third party owes to the Company with respect to the information, or (c) was known to the Purchaser prior to disclosure to the Purchaser by the Company; provided, however, that the Purchaser may disclose confidential information to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company provided that the Purchaser informs such person that such information is confidential and directs such person to maintain the confidentiality of such information. Notwithstanding anything to the contrary herein, the confidentiality obligations of this Section 12 shall survive the termination of this Agreement.

13. Miscellaneous.

13.1. Waivers and Amendments. Upon the approval of the Company and the written consent of the Required Holders, the obligations of the Company and the rights of the Purchasers under this Agreement may be waived (either generally or in a particular instance, either retroactively or prospectively and either for a specified period of time or indefinitely). Neither this Agreement, nor any provision hereof, maybe changed, waived, discharged or

terminated orally or by course of dealing, but only by an instrument in writing executed by the Company and the Required Holders.

13.2. Notices. All notices, requests, consents, and other communications under this Agreement shall be in writing and shall be deemed delivered (a) when delivered, if delivered personally, (b) four business days after being sent by registered or certified mail, return receipt requested, postage prepaid; (c) one business day after being sent via a reputable international overnight courier service guaranteeing next business day delivery, or (d) when receipt is acknowledged, in the case of facsimile, in each case to the intended recipient as set forth below, with respect to the Company, and to the addresses set forth on Schedule I with respect to the Purchasers.

If to the Company:

Arrowhead Research Corporation
200 South Lake Avenue, Suite 300
Pasadena, CA 91101
Attention: Chief Financial Officer
Facsimile No.: ((626) 304-3401

with a copy to:

Ropes & Gray LLP
Three Embarcadero Center
San Francisco, CA 94111
Attention: Ryan Murr, Esq.
Facsimile No.: (415) 315-6026

or at such other address as the Company or each Purchaser each may specify by written notice to the other parties hereto in accordance with this Section 13.2.

13.3. No Waivers. No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

13.4. Successors and Assigns. All the terms and provisions of this Agreement shall be binding upon and inure to the benefit of and be enforceable by the respective parties hereto, the successors and permitted assigns of each Purchaser and the successors of the Company, whether so expressed or not. None of the parties hereto may assign its rights or obligations hereof without the prior written consent of the Company, except that a Purchaser may, without the prior consent of the Company, assign its rights to purchase the Shares hereunder to any of its Affiliates (provided such Affiliate agrees to be bound by the terms of this Agreement and makes the same representations and warranties set forth in Section 3 hereof). This Agreement shall not inure to the benefit of or be enforceable by any other Person.

13.5. Headings. The headings of the Sections and paragraphs of this Agreement have been inserted for convenience of reference only and do not constitute a part of this Agreement.

13.6. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California without regard to its conflict of law principles.

13.7. Jurisdiction. Any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Agreement or the transactions contemplated hereby shall be brought in any federal or state court located in the City and County of Los Angeles, California, and each of the parties hereby consents to the jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding which is brought in any such court has been brought in an inconvenient forum. Process in any such suit, action or proceeding may be served on any party anywhere in the world, whether within or without the jurisdiction of any such court. Without limiting the foregoing, each party agrees that service of process on such party as provided in Section 13.2 shall be deemed effective service of process on such party.

13.8. Waiver of Jury Trial. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW WHICH CANNOT BE WAIVED, THE PURCHASERS AND THE COMPANY HEREBY WAIVE AND COVENANT THAT NEITHER THE COMPANY NOR THE PURCHASERS WILL ASSERT, ANY RIGHT TO TRIAL BY JURY ON ANY ISSUE IN ANY PROCEEDING, WHETHER AS PLAINTIFF, DEFENDANT OR OTHERWISE, IN RESPECT OF ANY ISSUE, CLAIM, DEMAND, ACTION OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, ANY OTHER AGREEMENT OR THE SUBJECT MATTER HEREOF OR THEREOF OR IN ANY WAY CONNECTED WITH, RELATED OR INCIDENTAL TO THE DEALINGS OF THE PURCHASER AND THE COMPANY HEREUNDER OR THEREUNDER, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING AND WHETHER IN TORT OR CONTRACT OR OTHERWISE. The Company acknowledges that it has been informed by the Purchasers that the provisions of this Section 13.8 constitute a material inducement upon which the Purchaser are relying and will rely in entering into this Agreement. The Purchaser or the Company may file an original counterpart or a copy of this Section 13.8 with any court as written evidence of the consent of the Purchaser and the Company to the waiver of the right to trial by jury.

13.9. Counterparts; Effectiveness. This Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, with the same effect as if all parties had signed the same document. All such counterparts (including counterparts delivered by facsimile or other electronic format) shall be deemed an original, shall be construed together and shall constitute one and the same instrument. This Agreement shall become effective when each party hereto shall have received counterparts hereof signed by all of the other parties hereto.

13.10. Entire Agreement. This Agreement contain the entire agreement among the parties hereto with respect to the subject matter hereof and thereof and, except as set forth below, such agreements supersede and replace all other prior agreements, written or oral, among the parties hereto with respect to the subject matter hereof and thereof. Notwithstanding the foregoing, this Agreement shall not supersede any confidentiality or other non-disclosure agreements that may be in place between the Company and any Purchaser.

13.11. Severability. If any provision of this Agreement shall be found by any court of competent jurisdiction to be invalid or unenforceable, the parties hereby waive such provision to the extent that it is found to be invalid or unenforceable. Such provision shall, to the maximum extent allowable by law, be modified by such court so that it becomes enforceable, and, as modified, shall be enforced as any other provision hereof, all the other provisions hereof continuing in full force and effect.

* * *

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first written above.

THE COMPANY

Arrowhead Research Corporation

By: _____

Name: _____

Title: _____

[PURCHASER'S SIGNATURE PAGE SEPARATELY ATTACHED]

PURCHASER SIGNATURE PAGE

The undersigned Purchaser hereby executes the Agreement with Arrowhead Research Corporation (the “**Company**”) and hereby authorizes this signature page to be attached to a counterpart of such document executed by a duly authorized officer of the Company.

Number of Shares
to be Purchased: _____

Name of Purchaser
(PLEASE TYPE OR PRINT)

U.S. Taxpayer ID No., if any:

By: _____

Name (print) _____

Title: _____

Address: _____

Facsimile: _____

Email: _____

Check box if not a U.S. Purchaser (see Section 3.12 and Annex A)

Please set out below your registration requirements. *If securities are to be registered in the name of more than one entity, provide the information requested below for each entity. (Please use multiple pages, one for each entity.)*

**Name in which Securities
are to be registered:** _____

**Number of Shares to
be purchased:** _____

**Address of registered holder
(if different from above):** _____

**Number of Shares of the Company’s
Common Stock currently held by the above named entity¹:** _____

**Contact name and telephone
number regarding settlement
and registration:** _____

¹ This information will be included in the selling stockholder table in the Registration Statement. If left blank, the Company will reflect in the Registration Statement that no shares are currently held (except to the extent that the Company has actual knowledge of additional holdings).

Name

Telephone Number

Email

ANNEX A

NON-U.S. PURCHASER REPRESENTATIONS, WARRANTIES AND COVENANTS

(Applicable only if checking "Not a U.S. Person" on signature page)

1. Purchaser represents and warrants that it (a) is not a "U.S. Person" (defined below), (b) is not acquiring the Shares for any U.S. Person, and (c) is not an underwriter, dealer or other person who must contractually participate in the distribution of the Shares.

For purposes of this Annex A, "**U.S. Person**" means:

- Any natural person residing in the United States (regardless of whether they have U.S. citizenship),
- Any partnership or corporation organized or incorporated under U.S. laws. Non-U.S. partnerships and corporations formed by U.S. persons principally to invest in unregistered securities are also U.S. persons unless organized and owned by accredited investors (within the meaning of Regulation D) who are not natural persons, estates or trusts.
- Any agency or branch of a foreign entity located in the United States.
- Any non-discretionary account held by a dealer or other fiduciary for the benefit or account of a U.S. person.
- Any discretionary account held by a dealer or other fiduciary organized, incorporated or resident in the United States; provided, however, that the following is not a U.S. person: any discretionary account held by a dealer or other fiduciary for the benefit or account of a non-U.S. person, even if the dealer or fiduciary is organized, incorporated or physically resides in the United States.
- Any trust or estate with a trustee, executor or administrator who is a U.S. person unless:
 - the trust or estate gives sole or shared investment power to a non-U.S. trustee, executor or administrator, as applicable; and
 - (in the case of a trust) no beneficiary and no settler of a revocable trust is a U.S. person or (in the case of an estate) the estate is governed by a foreign law.

2. Purchaser understands and agrees that the offering and sale of the Shares has not been registered under the Securities Act or any foreign securities laws and is being made in reliance upon Regulation S under the Securities Act. Purchaser agrees to resell the Shares only according with Regulation S or pursuant to a registration statement covering the resale of the Shares or an available registration exemption.

3. Purchaser agrees not to hedge the Shares securities except in compliance with the Securities Act.

4. Purchaser agrees that the certificates representing the Shares shall bear a legend stating that the transfer of the Shares is prohibited except in compliance with Regulation S, under a registration statement covering the securities or an available registration exemption, and that hedging transactions involving these securities are prohibited except in compliance with the Securities Act.

5. Purchaser agrees that the Company shall not, and shall instruct the transfer agent for the Common Stock not to, register any transfer of Shares that does not comply with Regulation S or is not made under a registration statement covering the securities or an available registration exemption.

SUBSCRIPTION AGREEMENT

This Subscription Agreement (this "**Agreement**") is made and entered into as of October 21, 2011 by and among Arrowhead Research Corporation, a Delaware corporation (the "**Company**"), and the undersigned hereto (each a "**Purchaser**" and together the "**Purchasers**"). Certain terms used and not otherwise defined in the text of this Agreement are defined in Section 9 hereof.

RECITALS

WHEREAS, the Company and the Purchasers are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by Section 4(2) of the Securities Act of 1933, as amended (the "**Securities Act**"), Rule 506 of Regulation D ("**Regulation D**") and/or Regulation S, each as promulgated by the United States Securities and Exchange Commission (the "**Commission**") under the Securities Act;

WHEREAS, the Company desires to sell to the Purchasers, and the Purchasers desire to purchase from the Company shares of common stock, \$0.001 par value per share (the "**Common Stock**"), in accordance with the terms and provisions of this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the mutual representations, warranties and covenants herein contained, the parties hereto hereby agree as follows:

1. **Subscription; Payment.** The Purchaser, intending to be legally bound under this Agreement, hereby irrevocably agrees to purchase from the Company, the number of shares of Common Stock set forth on the signature page attached hereto (the "**Shares**") at a per share price equal to \$0.37 (the "**Share Price**") for an aggregate purchase price equal to \$2,497,500 (the "**Capital Commitment**"). This Subscription is submitted to the Purchaser in accordance with and subject to the terms and conditions described in this Subscription Agreement.

Purchaser shall either: (i) enclose herewith a certified or official bank check payable to the Company or (ii) transmit by wire transfer the amount of the Capital Commitment. The Company shall deposit all proceeds received for the Subscription in an account at Citizens Business Bank, pending acceptance of the Subscription.

2. **Acceptance of Subscription; Closing; Effectiveness.** The Purchaser understands and agrees that the Company in its sole discretion reserves the right to accept or reject this or any other subscription in whole or in part, notwithstanding prior receipt by Purchaser of notice of acceptance. If this Subscription is rejected by the Company in whole or in part, the Company shall promptly return all funds received from the Purchaser without interest or deduction and this Subscription Agreement shall thereafter be of no further force or effect. If the Subscription is accepted in whole or in part, the Company shall notify the Purchaser of that fact, in which case this Subscription will only become effective upon the execution of such Stock and Asset Purchase Agreement by and between the Company, Hoffman-La Roche Inc. and F. Hoffmann-La Roche Ltd. (the "**Roche Transaction**") and the purchase and sale of the Shares shall occur in three equal tranches (each, a "**Closing**"), with one-third of the Shares to be sold: (i) on a date within ten (10) business days after the date of execution of the Roche Transaction, (ii) on the date that is four (4) months after the execution date of the Roche Transaction and (iii) on the

date that is seven (7) months after the execution date of the Roche Transaction (each such date, a “**Closing Date**”). Each Closing shall occur after the close of market at the offices of the Company.

Promptly after the Closing, the Company shall deliver to the Investor the Shares to be issued in such Closing electronically through the Depository Trust & Clearing Corporation, a/c 010 of Brown Brothers Harriman, and pursuant to further instructions received by the Company at least two (2) Business Days prior to the applicable Closing.

3. Representations and Warranties of the Purchasers. Each Purchaser, severally but not jointly, represents and warrants to the Company that the statements contained in this Section 3 are true and complete as of the date of this Agreement and will be true and complete as of the date of each Closing:

3.1. Organization. The Purchaser represents that the Purchaser is either an individual or an entity duly formed, validly existing and in good standing under the laws of the jurisdiction of its organization, has not been organized, reorganized or recapitalized specifically for the purpose of investing in the Company and has all corporate, partnership, limited liability or similar power and authority, as applicable, to enter into this Agreement and the instruments referred to herein to which it is a party and to consummate the transactions contemplated hereby and thereby.

3.2. Validity. The execution, delivery and performance of this Agreement and the instruments referred to herein, in each case to which the Purchaser is a party, and the consummation by the Purchaser of the transactions contemplated hereby and thereby, have been duly authorized by all necessary corporate, partnership, limited liability or similar actions, as applicable, on the part of such Purchaser. This Agreement has been duly executed and delivered by the Purchaser, and the instruments referred to herein to which it is a party will be duly executed and delivered by the Purchaser, and each such agreement and instrument constitutes or will constitute a valid and binding obligation of the Purchaser, enforceable against it in accordance with its terms, except as limited by applicable bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors’ rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

3.3. Investment Representations and Warranties. The Purchaser understands and agrees that the offering and sale of the Shares has not been registered under the Securities Act or any applicable state securities laws and is being made in reliance upon federal and state exemptions for transactions not involving a public offering which depend upon, among other things, the bona fide nature of the investment intent and the accuracy of the Purchaser’s representations as expressed herein.

3.4. Acquisition for Own Account. The Purchaser is acquiring the Shares for its own account for investment and not with a view toward distribution in a manner which would violate the Securities Act or any applicable state securities laws.

3.5. Ability to Protect Its Own Interests and Bear Economic Risks. The

Purchaser, by reason of the business and financial experience of its management, has the capacity to protect its own interests in connection with the transactions contemplated by this Agreement and is capable of evaluating the merits and risks of the investment in the Shares. The Purchaser is able to bear the economic risk of an investment in the Shares and is able to sustain a loss of all of its investment in the Shares without economic hardship, if such a loss should occur.

3.6. Accredited Investor. The Purchaser is an “accredited investor” as that term is defined in Regulation D promulgated under the Securities Act.

3.7. Access to Information. The Purchaser has had adequate opportunity to ask questions of, and receive answers from, the Company’s officers, employees, agents, accountants, and representatives concerning the Company’s business, operations, financial condition, assets, liabilities, and all other matters relevant to its investment in the Shares. Purchaser understands that an investment in the Shares bears significant risk and represents that it has reviewed the SEC Reports, which serve to qualify the Company representations set forth in this Agreement.

3.8. Restricted Securities. The Purchaser understands that the Shares will be characterized as “restricted securities” under the federal securities laws inasmuch as they are being acquired from the Company in a private placement under Section 4(2) of the Securities Act and that under such laws and applicable regulations the Shares may be resold without registration under the Securities Act only in certain limited circumstances. The Purchaser acknowledges that the Shares must be held indefinitely unless subsequently registered under the Securities Act and under applicable state securities laws or an exemption from such registration is available. The Purchaser understands that the Company is under no obligation to register the Shares, except as provided in this Agreement. The Purchaser is aware of the provisions of Rule 144 under the Securities Act which permit limited resale of securities purchased in a private placement.

3.9. Tax Advisors. The Purchaser has had the opportunity to review with the Purchaser’s own tax advisors the federal, state and local tax consequences of this investment, where applicable, and the transactions contemplated by this Agreement. The Purchaser is relying solely on the Purchaser’s own determination as to tax consequences or the advice of such tax advisors and not on any statements or representations of the Company or any of its agents and understands that the Purchaser (and not the Company) shall be responsible for the Purchaser’s own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

3.10. Short Sales, etc. Purchaser represents, warrants and covenants to the Company that Purchaser has not, either directly or indirectly through an affiliate, agent or representative of the Company, engaged in any transaction in the securities of the Company during the thirty (30) days prior to the date that the Purchaser first learned of the proposed offering of the Shares. Purchaser represents and warrants to and covenants with the Company that Purchaser will not engage in any short sales of the Company’s Common Stock prior to the earlier of (i) the effectiveness of the Registration Statement (either directly or indirectly through an affiliate, agent or representative) and (ii) the date as of which the Purchaser may sell any of the Shares pursuant to Rule 144 or Regulation S, as applicable, each as promulgated under the Securities Act and only to the extent permitted under the Securities Act.

3.11. Foreign Purchaser Representations. To the extent applicable, Purchasers who are identified on the signature page hereto as not a “U.S. Purchaser” shall also make the representations, warranties and covenants set forth on Annex A attached hereto.

4. Representations and Warranties by the Company. Except as set forth in the SEC Reports or as may be disclosed by the Company in a written Disclosure Schedule provided by the Company to the Purchasers dated the date hereof (the “**Disclosure Schedule**”), the Company represents and warrants to the Purchasers that the statements contained in this Section 4 are true and complete as of the date of this Agreement. The SEC Reports are incorporated herein by reference and serve to qualify the Company’s representations and warranties, to the extent applicable. Accordingly, Purchasers are urged to review the SEC Reports before making an investment decision regarding the purchase of the Shares.

4.1. Capitalization. As of the date hereof, without giving effect to the Closing, the authorized capital stock of the Company consists of 145,000,000 shares of Common Stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.001 per share (“**Preferred Stock**”). As of the date hereof, there are: (i) 87,804,443 shares of Common Stock issued and outstanding, (ii) no shares of Preferred Stock issued and outstanding, and (iii) 31,640,991 shares of Common Stock reserved for issuance upon exercise of options, warrants and other convertible securities outstanding as of the date hereof. All of the outstanding shares of capital stock of the Company have been validly issued and are fully paid and non-assessable.

4.2. Subsidiaries. The Majority Subsidiaries of the Company are: Calando Pharmaceuticals, Inc., a Delaware corporation, Tego Biosciences Corporation, a Delaware corporation, and Ablaris Therapeutics, Inc., a Delaware corporation (each a “Subsidiary” and collectively, the “Subsidiaries”). The Company owns voting securities representing less than a majority of the outstanding voting securities issued by the following companies: Nanotope, Inc., a Delaware corporation, and Leonardo Biosystems, Inc., a Delaware corporation, each as described in the SEC Reports.

4.3. Organization. Each of the Company and the Subsidiaries (a) is duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its formation, (b) is duly qualified to do business as a foreign entity and is in good standing in each jurisdiction where the nature of the property owned or leased by it or the nature of the business conducted by it makes such qualification necessary, except where the failure to be so qualified would not have a Material Adverse Effect, and (c) has all requisite corporate power and authority to own or lease and operate its assets and carry on its business as presently being conducted.

4.4. Consents. Neither the execution, delivery or performance of this Agreement by the Company, nor the consummation by it of the obligations and transactions contemplated hereby or thereby (including, without limitation, the issuance, the reservation for issuance and the delivery of the Shares) requires any consent of, authorization by, exemption from, filing with or notice to any Governmental Entity or any other Person, other than filings required under applicable U.S. federal and state securities laws.

4.5. Authorization; Enforcement. The Company has all requisite corporate

power and has taken all necessary corporate action required for the due authorization, execution, delivery and performance by the Company of this Agreement and the consummation of the transactions contemplated hereby and thereby (including, without limitation, the issuance of the Shares and the provision to the Purchaser of the rights contemplated by this Agreement) and no action on the part of the stockholders of the Company is required. The execution, delivery and performance by the Company of this Agreement and the consummation by the Company of the transactions contemplated hereby and thereby, have been duly authorized by all necessary corporate action on the part of the Company. This Agreement has been duly executed and delivered by the Company, and the instruments referred to herein to which it is a party will be duly executed and delivered by the Company, and each such agreement constitutes or will constitute a legal, valid and binding obligation of the Company enforceable against it in accordance with its terms, except to the extent that enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance, and any other laws of general application affecting enforcement of creditors' rights generally, and as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

4.6. Valid Issuance of Shares. The Shares have been duly and validly authorized and, when issued and paid for pursuant to this Agreement, the Shares will be validly issued, fully paid and non-assessable, and the Shares shall be free and clear of all Encumbrances. No Conflicts. Except as specifically contemplated herein, the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated hereby and thereby (including, without limitation, the issuance and reservation for issuance, as applicable, of the Shares) will not (a) result in a violation of the certificate of incorporation, as amended, and the by-laws of the Company (the "**Charter Documents**"), (b) conflict with or result in the breach of the terms, conditions or provisions of or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give rise to any right of termination, acceleration or cancellation under, any material agreement, lease, mortgage, license, indenture, instrument or other contract to which the Company or any Subsidiary is a party, (c) result in a violation of any law, rule, regulation, order, judgment or decree (including, without limitation, U.S. federal and state securities laws and regulations) applicable to the Company or any Subsidiary or by which any property or asset of the Company or any Subsidiary is bound or affected, (d) result in a material violation of any rule or regulation of FINRA or its Trading Markets, or (e) result in the creation of any Encumbrance upon any of the assets of the Company or any Subsidiary. The Company and the Subsidiaries are not in violation of their respective Charter Documents, and the Company and the Subsidiaries are not in default (and no event has occurred which, with notice or lapse of time or both, would cause them to be in default) under, nor has there occurred any event giving others (with notice or lapse of time or both) any rights of termination, amendment, acceleration or cancellation of, any material agreement, indenture or instrument to which the Company or any Subsidiary is a party. The business of the Company and the Subsidiaries is not being conducted in violation of any law, ordinance or regulation of any Governmental Entity, except where the violation would not result in a Material Adverse Effect.

4.7. Right of First Refusal; Stockholders Agreement; Voting and Registration Rights. There are no provisions of the Charter Documents, and no Material Contracts, other than this Agreement, that (a) may affect or restrict the voting rights of the Purchaser with respect to the Shares in its capacity as a stockholder of the Company, (b) restrict the ability of the

Purchaser, or any successor thereto or assignee or transferee thereof, to transfer the Shares, (c) require the vote of more than a majority of the Company's issued and outstanding Common Stock, voting together as a single class, to take or prevent any corporate action, other than those matters requiring a different vote under Delaware law, or (d) entitle any party to nominate or elect any director of the Company or require any of the Company's stockholders to vote for any such nominee or other person as a director of the Company in each case.

4.8. No General Solicitation. Neither the Company, nor any of its Affiliates or any other Person acting on the Company's behalf, has directly or indirectly engaged in any form of general solicitation or general advertising with respect to the Shares, nor have any of such Persons made any offers or sales of any security of the Company or its Affiliates or solicited any offers to buy any security of the Company or its Affiliates under circumstances that would require registration of the Shares under the Securities Act.

4.9. Financial Statements.

(a) The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, since October 1, 2010 (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the "**SEC Reports**") on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied as to form in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. All agreements to which the Company is a party or to which the property or assets of the Company are subject, which are required to be described in or filed as exhibits to an SEC Report, have been so described or filed.

(b) The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with GAAP, except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present the financial position of the Company as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

4.10. Absence of Litigation. There is no claim, action, suit, arbitration, investigation or other proceeding pending against, or to the knowledge of the Company, threatened against or affecting, the Company, any Subsidiary or any of their respective properties

or, to the knowledge of the Company, any of their respective officers or directors before any Governmental Entity.

4.11. Taxes. The Company and the Subsidiaries have properly filed all federal, foreign, state, local, and other tax returns and reports which are required to be filed by them, which returns and reports were properly completed and are true and correct in all material respects, and all taxes, interest, and penalties due and owing have been timely paid. There are no outstanding waivers or extensions of time with respect to the assessment or audit of any tax or tax return of the Company or any Subsidiary, or claims now pending or matters under discussion between the Company or any Subsidiary and any taxing authority in respect of any tax of the Company. The Company has no material uncertain tax positions pursuant to FASB Interpretation 48 (FIN 48), *Accounting for Uncertainty in Income Taxes*.

4.12. Employee Matters. The Company has disclosed in the SEC Reports any “employee benefit plan” subject to the Employee Retirement Income Security Act of 1974, as amended (“*ERISA*”), that it maintains for employees. No director or officer or other employee of the Company or any Subsidiary will become entitled to any retirement, severance, change of control, or similar benefit or enhanced or accelerated benefit (including any acceleration of vesting) or lapse of repurchase rights or obligations with respect to any employee benefit plan subject to ERISA or other benefit under any compensation plan or arrangement of the Company or any Subsidiary as a result of the transactions contemplated in this Agreement.

4.13. Compliance with Laws.

(a) The Company and each Subsidiary has been and is in material compliance with the terms of, all franchises, permits, licenses and other rights and privileges necessary to conduct their respective present and proposed businesses and each is in compliance with and has not violated, in any material respect, (i) any judgments, orders, decrees, injunctions or writs applicable to the Company or Subsidiary, or (ii) any applicable provisions of any laws, statutes, ordinances, rules or regulations applicable to the conduct of their respective business, including the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any drug or drug candidate under development, manufactured or distributed by the Company or any Subsidiary (collectively, “*Applicable Laws*”).

(b) The Company and the Subsidiaries:

(i) have not received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the U.S. Food and Drug Administration (the “*FDA*”) or any other federal, state, local or foreign governmental or regulatory authority alleging or asserting material noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and

supplements or amendments thereto required by any such Applicable Laws (“**Authorizations**”);

(ii) possess all material Authorizations and such Authorizations are valid and in full force and effect and the Company or the Subsidiary, as applicable, is not in material violation of any term of any such Authorizations;

(iii) have not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from the FDA or any other federal, state, local or foreign governmental or regulatory authority or third party alleging that any product operation or activity is in material violation of any Applicable Laws or Authorizations and has no knowledge that the FDA or any other federal, state, local or foreign governmental or regulatory authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding;

(iv) have not received notice that the FDA or any other federal, state, local or foreign governmental or regulatory authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any material Authorizations and has no knowledge that the FDA or any other federal, state, local or foreign governmental or regulatory authority is considering such action;

(v) have filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were materially complete and correct on the date filed (or were corrected or supplemented by a subsequent submission); and

(vi) have not, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, “dear doctor” letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company’s knowledge, no third

party has initiated, conducted or intends to initiate any such notice or action.

(c) The studies, tests and preclinical and clinical trials conducted by or on behalf of the Company and the Subsidiaries were and, if still pending, are being conducted in accordance with experimental protocols, procedures and controls pursuant to accepted professional scientific standards and all Applicable Laws and Authorizations, including, without limitation, the Federal Food, Drug and Cosmetic Act and the rules and regulations promulgated thereunder (collectively, “**FFDCA**”); the descriptions of the results of such studies, tests and trials contained in the SEC Reports are accurate and complete in all material respects and fairly present in all material respects the data derived from such studies, tests and trials; the Company is not aware of any studies, tests or trials, the results of which the Company believes reasonably call into question the study, test, or trial results described or referred to in the SEC Reports when viewed in the context in which such results are described and the clinical state of development; and, since October 1, 2010, the Company and the Subsidiaries have not received any notices or correspondence from the FDA or any other federal, state, local or foreign governmental or regulatory authority requiring the termination, suspension or material modification of any of the foregoing studies, tests or preclinical or clinical trials.

4.14. Intellectual Property Matters.

(a) “**Intellectual Property**” means any and all of the following arising under the laws of the United States, any other jurisdiction or any treaty regime: (i) all inventions (whether patentable or unpatentable and whether or not reduced to practice), all improvements thereon, and all patents, patent applications and patent disclosures, together with all reissues, continuations, continuations-in-part, revisions, extensions and reexaminations thereof, (ii) all trademarks, service marks, trade dress, logos, trade names and corporate names, together with all translations, adaptations, derivations and combinations thereof and including all goodwill associated therewith, and all applications, registrations and renewals in connection therewith, (iii) all copyrightable works, all copyrights and all applications, registrations and renewals in connection therewith, (iv) all trade secrets and confidential business information (including, without limitation, ideas, research and development, know-how, formulas, compositions, manufacturing and production processes and techniques, technical data, designs, drawings, specifications, customer and supplier lists, pricing and cost information and business and marketing plans and proposals), (v) all computer software (including, without limitation, data and related documentation and except for any commercial “shrink-wrapped” software) and source codes (other than open source codes), (vi) all other proprietary rights, (vii) all copies and tangible embodiments of the foregoing (in whatever form or medium) and (viii) all licenses or agreements in connection with the foregoing. “**Company Intellectual Property**” means all Intellectual Property which is used in connection with, and is material to, the business of the Company and the Subsidiaries and all Intellectual Property

owned by the Company or any Subsidiary, provided that any Intellectual Property that is licensed by the Company or any Subsidiary shall be included within the meaning of Company Intellectual Property only within the scope of use by the Company or the Subsidiary, as applicable, or in connection with the Company's or Subsidiary's business.

(b) With respect to each item of Company Intellectual Property that is material to the business of the Company or any Subsidiary:

(i) The Company or such Subsidiary possesses all rights, titles and interests in and to the item if owned by the Company or such Subsidiary, as applicable, free and clear of any Encumbrance, license or other restriction, and possesses all rights necessary in the case of a licensed item to use such item in the manner in which it presently uses the item or reasonably contemplates using such item, and the Company or such Subsidiary has taken or caused to be taken reasonable and prudent steps to protect its rights in and to, and the validity and enforceability of, the item owned by the Company or such Subsidiary;

(ii) no action, suit, proceeding, hearing, investigation, charge, complaint, claim or demand is pending that challenges the legality, validity, enforceability, use or ownership of the item;

(iii) to the knowledge of the Company, the item, if owned by the Company or such Subsidiary, does not infringe upon any valid and enforceable Intellectual Property right or other right of any third party;

(iv) to the knowledge of the Company, no third party has infringed upon or misappropriated the intellectual property rights held by the Company or such Subsidiary in the item; and

(v) each option, license, sublicense or agreement of any kind covering the item is legal, valid, binding, enforceable and in full force and effect.

(c) All registered patents, copyrights, trademarks and service marks included in the Company Intellectual Property are, to the knowledge of the Company, valid and subsisting and are not subject to any claims, Encumbrances, taxes or other fees except for periodic filing, annuity and maintenance fees and Permitted Liens.

4.15. Title to Property and Assets. The Company does not own any real

property. The Company and each Subsidiary owns or has legally enforceable rights to use or hold for use its personal property and assets free and clear of all Encumbrances except: (i) Permitted Liens and (ii) such other Encumbrances, if any, that individually or in the aggregate, do not and would not detract from the value of any asset or property of the Company or such Subsidiary or interfere with the use or contemplated use of any personal property of the Company or such Subsidiary. With respect to any real property, the Company and each Subsidiary is not in violation in any material respect of any of its leases.

4.16. Disclosure. The Company understands and confirms that the Purchaser will rely on the foregoing representations in effecting transactions in securities of the Company. No representation or warranty by the Company contained in this Agreement contains any untrue statement of a material fact or omits to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The Company acknowledges and agrees that the Purchaser does not make and has not made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

4.17. Absence of Changes. Since the date of the latest financial statements included in the SEC Reports and except as contemplated by, or in connection with, this Agreement and the Roche Transaction, there has not been any Material Adverse Effect or any event or events that individually or in the aggregate would reasonably be expected to have a Material Adverse Effect.

4.18. Accountants. Rose, Snyder & Jacobs (“**RSJ**”), who expressed their opinion with respect to the financial statements included in the SEC Reports, are independent accountants as required by the Securities Act and the rules and regulations promulgated thereunder. There are no disagreements of any kind presently existing, or reasonably anticipated by the Company to arise, between the Company and RSJ.

5. Covenants.

5.1. Best Efforts. Each party shall use its best efforts to timely satisfy each of the conditions to be satisfied by it as provided in Section 6 of this Agreement.

5.2. Blue Sky. The Company shall, on or before the Closing Date, take such action as the Company shall reasonably determine is necessary in order to obtain an exemption for or to qualify the Shares for sale to the Purchasers at the Closing pursuant to this Agreement under applicable securities or “blue sky” laws of the states of the United States (or to obtain an exemption from such qualification), and shall, at the request of any Purchaser, provide evidence of any such action so taken to such Purchaser(s) on or prior to the Closing Date. The Company shall make all filings and reports relating to the offer and sale of the Shares by the Company, as may be required under applicable securities or “blue sky” laws of the states of the United States following the Closing Date.

5.3. Reporting Status. Until the first anniversary of the Closing, (the “**Reporting Period**”), the Company shall file all reports required to be filed with the Commission pursuant to the Exchange Act or the rules and regulations thereunder.

5.4. Use of Proceeds. The Company will use the proceeds from the sale of the Shares for general corporate purposes, including research and development, sales, marketing, working capital and general and administrative expenses.

5.5. Lock-Up Period. For six (6) months after the date of this Agreement, the Purchaser agrees not to sell, offer to sell, contract or otherwise agree to sell with respect any Common Stock held by the Purchaser or any Person affiliated with the Purchaser.

6. Conditions of Parties' Obligations.

6.1. Conditions of the Purchasers' Obligations at the Closing. The obligations of the Purchasers under Section 1 hereof are subject to the fulfillment, prior to the Closing, of all of the following applicable conditions, any of which may be waived in whole or in part by the Purchasers in their absolute discretion.

(a) Representations and Warranties. The representations and warranties of the Company contained in this Agreement and in any certificate, if any, or other writing, if any, delivered by the Company pursuant hereto shall have been true and correct as of the date of first set forth above.

(b) Performance. The Company shall have performed and complied in all material respects with all agreements, obligations and conditions contained in this Agreement that are required to be performed or complied by it on or before the Closing Date.

(c) Qualification Under State Securities Laws. All registrations, qualifications, permits and approvals, if any, required under applicable state securities laws shall have been obtained for the lawful execution, delivery and performance of this Agreement.

(d) Consents and Waivers. The Company shall have obtained all consents or waivers necessary to execute and perform its obligations under this Agreement. All corporate and other action and governmental filings necessary to effectuate the terms of this Agreement and other agreements and instruments executed and delivered by the Company in connection herewith shall have been made or taken, and no Material Adverse Effect has occurred with respect to the operation of the Company's business.

(e) No Material Adverse Effect. There shall have been no Material Adverse Effect with respect to the Company since the date of the latest audited balance sheet of the Company included in the SEC Reports.

6.2. Conditions of the Company's Obligations. The obligations of the Company under Section 1 hereof are subject to the fulfillment prior to or on the Closing Date of all of the following conditions, any of which may be waived in whole or in part by the Company: (i) each Purchaser at the Closing shall have performed all of its obligations hereunder required to be performed by it at or prior to the Closing, and (ii) the representations and warranties of the Purchasers at the Closing contained in this Agreement shall be true and correct at and as of the

Closing as if made at and as of the Closing (except to the extent expressly made as of an earlier date, in which case as of such earlier date).

7. Transfer Restrictions. The Purchasers understand that the Company may, as a condition to the transfer of any of the Shares, require that the request for transfer be accompanied by an opinion of counsel reasonably satisfactory to the Company, to the effect that the proposed transfer does not result in a violation of the Securities Act, unless such transfer is covered by an effective registration statement or by Rule 144 or Rule 144A under the Securities Act (or, solely with respect to non-U.S. Persons, as permitted under Regulation S); provided, however, that an opinion of counsel shall not be required for a transfer by a Purchaser that is (A) a partnership transferring to its partners or former partners in accordance with partnership interests, (B) a corporation transferring to a wholly owned subsidiary or a parent corporation that owns all of the capital stock of such Purchaser, (C) a limited liability company transferring to its members or former members in accordance with their interest in the limited liability company, (D) an individual transferring to such Purchaser's family member or trust for the benefit of an individual Purchaser, (E) transferring its Shares to any Affiliate of such Purchaser, in the case of an institutional investor, or other Person under common management with such Purchaser, or (F) a transfer that is made pursuant to a bona fide gift to a third party; provided, further, that (i) the transferee in each case agrees to be subject to the restrictions in this Section 7 and provides the Company with a representation letter containing substantially the same representations and warranties in Sections 3.3 through 3.10 hereof, (ii) the Company satisfies itself that the number of transferees is sufficiently limited and (iii) in the case of transferees that are partners or limited liability company members, the transfer is for no consideration. It is understood and agreed that notwithstanding the fact that the certificates evidencing any Shares do not bear legends restricting transfer under the Securities Act of 1933, the Shares are nevertheless restricted securities and may only be sold pursuant to an effective registration statement or under Rule 144 or Rule 144A under the Securities Act (or, solely with respect to non-U.S. Persons, as permitted under Regulation S).

8. Registration Rights of Purchasers.

8.1. Mandatory Registration. The Company shall prepare and file with the Commission within 90 days after the first Closing Date (the "**Filing Deadline**") a Registration Statement under the Act on appropriate form covering the resale of the full amount of the Shares (the "**Registrable Securities**"). The Company shall use commercially reasonable efforts to have the Registration Statement declared effective within 180 days after the Closing Date.

8.2. Limitation on Registrable Securities. In the event that the Staff of the Commission (the "**Staff**") determines that the full amount of the Registrable Securities cannot be registered on the Registration Statement due to limitations under Rule 415 of the Act or otherwise, then Company shall: (i) register the resale of that portion of the Registrable Securities as the Staff may permit, and (ii) undertake to register the remaining portion of the Registrable Securities as soon as registration would be permitted, as determined by the Company in good faith based on the Staff's publicly available interpretations of SEC rules and regulations.

8.3. Related Obligations. At such time as the Company is obligated to file a Registration Statement with the Commission pursuant to Section 8.1 hereof, the Company will

use commercially reasonable efforts to effect the registration of the Registrable Securities in accordance with the intended method of disposition thereof and, pursuant thereto, the Company shall have the following obligations:

(a) The Company shall keep each Registration Statement effective pursuant to Rule 415 at all times until the earlier of (i) the date as of which the Purchasers may sell all of the Registrable Securities covered by such Registration Statement without restriction or limitation pursuant to Rule 144 or Regulation S, to the extent a Purchaser is not a U.S. Person as of the Closing, and without the requirement to be in compliance with Rule 144(c) (1) (or any successor thereto) promulgated under the Securities Act or (ii) the date on which the Purchasers shall have sold all of the Registrable Securities covered by such Registration Statement (the "**Registration Period**"). The Company shall ensure that each Registration Statement (including any amendments or supplements thereto and prospectuses contained therein) shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein (in the case of prospectuses, in the light of the circumstances in which they were made) not misleading.

(b) The Company shall prepare and file with the Commission such amendments (including post-effective amendments) and supplements to a Registration Statement and the prospectus used in connection with such Registration Statement, which prospectus is to be filed pursuant to Rule 424 promulgated under the Securities Act, as may be necessary to keep such Registration Statement effective at all times during the Registration Period, and, during such period, comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities of the Company covered by such Registration Statement until such time as all of such Registrable Securities shall have been disposed of in accordance with the intended methods of disposition by the seller or sellers thereof as set forth in such Registration Statement.

(c) The Company shall notify the Purchasers in writing of the happening of any event, as promptly as practicable after becoming aware of such event, as a result of which the prospectus included in a Registration Statement, as then in effect, includes an untrue statement of a material fact or omission to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading (provided that in no event shall such notice contain any material, nonpublic information), and, promptly prepare a supplement or amendment to such Registration Statement to correct such untrue statement or omission, and deliver 10 copies of such supplement or amendment to the Purchasers (or such other number of copies as the Purchasers may reasonably request). The Company shall also promptly notify the Purchasers in writing (i) when a prospectus or any prospectus supplement or post-effective amendment has been filed, and when a Registration Statement or any post-effective amendment has become effective (notification of such effectiveness shall be delivered to the Purchasers by facsimile on the same day of such effectiveness and by overnight mail), (ii) of any

request by the Commission for amendments or supplements to a Registration Statement or related prospectus or related information, and (iii) of the Company's reasonable determination that a post-effective amendment to a Registration Statement would be appropriate.

(d) The Company shall use commercially reasonable efforts to prevent the issuance of any stop order or other suspension of effectiveness of a Registration Statement, or the suspension of the qualification of any of the Registrable Securities for sale in any jurisdiction and, if such an order or suspension is issued, to obtain the withdrawal of such order or suspension at the earliest possible moment and to notify the Purchaser who holds Registrable Securities being sold of the issuance of such order and the resolution thereof or its receipt of notice of the initiation or threat of any proceeding for such purpose.

(e) If requested by a Purchaser, the Company shall (i) as soon as practicable incorporate in a prospectus supplement or post-effective amendment such information as the Purchaser reasonably requests to be included therein relating to the sale and distribution of Registrable Securities, including, without limitation, information with respect to the number of Registrable Securities being offered or sold, the purchase price being paid therefor and any other terms of the offering of the Registrable Securities to be sold in such offering; (ii) as soon as practicable make all required filings of such prospectus supplement or post-effective amendment after being notified of the matters to be incorporated in such prospectus supplement or post-effective amendment; and (iii) as soon as practicable, supplement or make amendments to any Registration Statement if reasonably requested by the Purchaser.

(f) Notwithstanding anything to the contrary herein, at any time after the Effective Date, the Company may delay the disclosure of material, non-public information concerning the Company the disclosure of which at the time is not, in the good faith opinion of the Board of Directors and its counsel, in the best interest of the Company and, in the opinion of counsel to the Company, otherwise required (a "**Grace Period**"); provided, that the Company shall promptly (i) notify the Purchasers in writing of the existence of material, non-public information giving rise to a Grace Period (provided that in each notice the Company will not disclose the content of such material, non-public information to the Purchasers) and the date on which the Grace Period will begin, and (ii) notify the Purchasers in writing of the date on which the Grace Period ends; and, provided further, that the Grace Periods shall not exceed an aggregate of 60 Business Days during any 365-day period (each, an "**Allowable Grace Period**"). For purposes of determining the length of a Grace Period above, the Grace Period shall begin on and include the date the Purchasers receive the notice referred to in clause (i) and shall end on and include the later of the date the Purchasers receive the notice referred to in clause (ii) and the date referred to in such notice. The requirements of Section 8 hereof shall not be applicable during the period of any Allowable Grace Period. Upon expiration of the Grace Period, the Company shall again be

bound by the requirements of Section 8 with respect to the information giving rise thereto unless such material, non-public information is no longer applicable.

8.4. Obligations of the Purchasers.

(a) At least two Business Days prior to the first anticipated filing date of a Registration Statement, the Company shall notify each Purchaser in writing of the information the Company requires from such Purchaser in order to have that Purchaser's Registrable Securities included in such Registration Statement. It shall be a condition precedent to the obligations of the Company to complete the registration pursuant to this Agreement with respect to the Registrable Securities of a particular Purchaser that the Purchaser shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it as shall be reasonably required to effect the effectiveness of the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request.

(b) Each Purchaser, by its acceptance of the Registrable Securities, agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of any Registration Statement hereunder, unless the Purchaser has notified the Company in writing of the Purchaser's election to exclude all of the Purchaser's Registrable Securities from such Registration Statement.

(c) Each Purchaser agrees that, upon receipt of any notice from the Company of the existence of a Grace Period, the Purchaser will immediately discontinue disposition of Registrable Securities pursuant to any Registration Statement(s) covering such Registrable Securities until the Purchaser's receipt of the copies of the supplemented or amended prospectus contemplated by Section 8.3(f) or receipt of notice that no supplement or amendment is required.

(d) Each Purchaser covenants and agrees that it will comply with the prospectus delivery requirements of the Securities Act as applicable to it or an exemption therefrom in connection with sales of Registrable Securities pursuant to the Registration Statement.

8.5. Expenses of Registration. All reasonable expenses, other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Section 8, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees, and fees and disbursements of counsel for the Company, shall be paid by the Company.

8.6. Reports under the Exchange Act. With a view to making available to the Purchasers the benefits of Rule 144 promulgated under the Securities Act or any other similar rule or regulation of the Commission that may at any time permit the Purchasers to sell the Shares to the public without registration ("**Rule 144**"), the Company agrees to:

- (a) make and keep public information available, as those terms are understood and defined in Rule 144, during the Reporting Period;
- (b) file with the Commission in a timely manner all reports and other documents required of the Company under the Exchange Act; and
- (c) furnish to the Purchasers so long as any Purchaser owns Registrable Securities, promptly upon request during the Reporting Period, (i) a written statement by the Company, if true, that it has complied with the reporting requirements of Rule 144, the Securities Act and the Exchange Act, (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company and (iii) such other information as may be reasonably requested to permit the Purchasers to sell the Shares pursuant to Rule 144 without registration.

8.7. Assignment of Registration Rights. The rights under this Section 8 shall be automatically assignable by a Purchaser to any transferee of all or any portion of the Purchaser's Registrable Securities if: (i) the Purchaser agrees in writing with the transferee or assignee to assign such rights and a copy of such agreement is furnished to the Company within a reasonable time after such assignment; (ii) the Company is, within a reasonable time after such transfer or assignment, furnished with written notice of (a) the name and address of such transferee or assignee and (b) the securities with respect to which such registration rights are being transferred or assigned; (iii) immediately following such transfer or assignment the further disposition of such securities by the transferee or assignee is restricted under the Securities Act or applicable state securities laws; (iv) at or before the time the Company receives the written notice contemplated by clause (ii) of this sentence the transferee or assignee agrees in writing with the Company to be bound by all of the provisions contained herein; and (v) such transfer shall have been made in accordance with the applicable requirements of this Agreement.

8.8. Indemnification.

(a) Company Indemnification. The Company will indemnify each Purchaser who holds Registrable Securities (if Registrable Securities held by such Purchaser are included in the securities as to which such registration is being effected), each of its officers and directors, partners, members and each person controlling such Purchaser within the meaning of Section 15 of the Securities Act, against all expenses, claims, losses, damages or liabilities (or actions in respect thereof), including any of the foregoing incurred in settlement of any litigation, commenced or threatened, arising out of or based on (A) any untrue statement (or alleged untrue statement) of a material fact contained in any Registration Statement, prospectus, offering circular or other document, or any amendment or supplement thereto, incident to any such Registration Statement, or based on any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances in which they were made, not misleading, or (B) any violation by the Company of the Securities Act, the Exchange Act, state securities laws or any rule or regulation promulgated under such laws applicable to the Company in connection

with any such registration, and in each case, the Company will reimburse each such Purchaser, each of its officers and directors, partners, members and each person controlling such Purchaser, for any legal and any other expenses reasonably incurred, as such expenses are incurred, in connection with investigating, preparing or defending any such claim, loss, damage, liability or action, *provided* that the Company will not be liable in any such case to the extent that any such claim, loss, damage, liability or expense arises out of or is based on (X) any untrue statement or omission or alleged untrue statement or omission made in reliance upon and in conformity with written information furnished to the Company by an instrument duly executed by such Purchaser or controlling person, and stated to be specifically for use therein, (Y) the use by a Purchaser of an outdated or defective prospectus after the Company has notified such Purchaser in writing that the prospectus is outdated or defective or (Z) a Purchaser's (or any other indemnified person's) failure to send or give a copy of the prospectus or supplement (as then amended or supplemented), if required, pursuant to Rule 172 under the Securities Act (or any successor rule) to the Persons asserting an untrue statement or alleged untrue statement or alleged untrue statement or omission or alleged omission at or prior to the written confirmation of the sale of Registrable Securities to such person if such statement or omission was corrected in such prospectus or supplement; *provided, further*, that the indemnity agreement contained in this Section 8.8(a) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld).

(b) **Purchaser Indemnification.** Each Purchaser holding Registrable Securities will, if Registrable Securities held by such Purchaser are included in the securities as to which such registration is being effected, severally and not jointly, indemnify the Company, each of its directors and officers, other holders of the Company's securities covered by such Registration Statement, each person who controls the Company within the meaning of Section 15 of the Securities Act, and each such holder, each of its officers and directors and each person controlling such holder within the meaning of Section 15 of the Securities Act, against all claims, losses, damages and liabilities (or actions in respect thereof) arising out of or based on: (A) any untrue statement (or alleged untrue statement) of a material fact contained in any such Registration Statement, prospectus, offering circular or other document, or any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, to the extent, and only to the extent, that such untrue statement (or alleged untrue statement) or omission (or alleged omission) is made in such Registration Statement, prospectus, offering circular or other document in reliance upon and in conformity with written information furnished to the Company by an instrument duly executed by such Purchaser and stated to be specifically for use therein, or (B) any violation by such Purchaser of the Securities Act, the Exchange Act, state securities laws or any rule or regulation promulgated under such laws applicable to such Purchaser, and in each case, such Purchaser will reimburse the Company, each other holder, and directors, officers,

persons, underwriters or control persons of the Company and the other holders for any legal or any other expenses reasonably incurred, as such expenses are incurred, in connection with investigating or defending any such claim, loss, damage, liability or action; provided, that the indemnity agreement contained in this Subsection 8.8(b) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of such indemnifying Purchaser (which consent shall not be unreasonably withheld or delayed). The liability of any Purchaser for indemnification under this Section 8.8(b) in its capacity as a seller of Registrable Securities shall not exceed the amount of net proceeds to such Purchaser of the securities sold in any such registration.

(c) Notice and Procedure. Each party entitled to indemnification under this Section 8.8 (the “**Indemnified Party**”) shall give written notice to the party required to provide indemnification (the “**Indemnifying Party**”) promptly after such Indemnified Party has actual knowledge of any claim as to which indemnity may be sought, and shall permit the Indemnifying Party to assume the defense of any such claim or any litigation resulting therefrom, provided that counsel for the Indemnifying Party, who shall conduct the defense of such claim or litigation, shall be approved by the Indemnified Party (whose approval shall not unreasonably be withheld), and the Indemnified Party may participate in such defense at such party’s expense, and provided further that the failure of any Indemnified Party to give notice as provided herein shall not relieve the Indemnifying Party of its obligations under this Agreement unless the failure to give such notice is materially prejudicial to an Indemnifying Party’s ability to defend such action and provided further, that the Indemnifying Party shall not assume the defense for matters as to which there is a conflict of interest or there are separate and different defenses. No Indemnifying Party, in the defense of any such claim or litigation, shall, except with the consent of each Indemnified Party (whose consent shall not be unreasonably withheld), consent to entry of any judgment or enter into any settlement which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such Indemnified Party of a release from all liability in respect to such claim or litigation.

(d) Contribution. If the indemnification provided for in this Section 8.8 is held by a court of competent jurisdiction to be unavailable to an Indemnified Party with respect to any losses, claims, damages or liabilities referred to herein, the Indemnifying Party, in lieu of indemnifying such Indemnified Party thereunder, shall to the extent permitted by applicable law contribute to the amount paid or payable by such Indemnified Party as a result of such loss, claim, damage or liability in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party on the one hand and of the Indemnified Party on the other in connection with the untrue statement or omission that resulted in such loss, claim, damage or liability, as well as any other relevant equitable considerations. The relative fault of the Indemnifying Party and of the Indemnified Party shall be determined by a court of law by reference to, among other things, whether the untrue or alleged untrue statement of a material

fact or the omission to state a material fact relates to information supplied by the Indemnifying Party or by the Indemnified Party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission; provided, that in no event shall any contribution by a Purchaser hereunder exceed the proceeds from the offering received by such Purchaser. The amount paid or payable by a party as a result of any loss, claim, damage or liability shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys' or other reasonable fees or expenses incurred by such party in connection with any proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section 8.8 was available to such party in accordance with its terms.

(e) Survival. The obligations of the Company and the Purchasers under this Section 8.8 shall survive completion of any offering of Registrable Securities in a Registration Statement and the termination of this Agreement. The indemnity and contribution agreements contained in this Section 8.8 are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties and are not in diminution or limitation of other remedies or causes of action that the parties may have under this Agreement.

9. Definitions. Unless the context otherwise requires, the terms defined in this Section 9 shall have the meanings specified for all purposes of this Agreement.

Except as otherwise expressly provided, all accounting terms used in this Agreement, whether or not defined in this Section 9, shall be construed in accordance with GAAP. If the Company has one or more Subsidiaries, such accounting terms shall be determined on a consolidated basis for the Company and each of its Subsidiaries, and the financial statements and other financial information to be furnished by the Company pursuant to this Agreement shall be consolidated and presented with consolidating financial statements of the Company and each of its Subsidiaries.

"Affiliate" shall have the meaning ascribed to such term in Rule 12b-2 of the General Rules and Regulations under the Exchange Act.

"Business Day" means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

"Code" means the Internal Revenue Code of 1986, as amended.

"Commission" means the Securities and Exchange Commission.

"Effective Date" means the date the Registration Statement pursuant to Section 8 has been declared effective by the Commission.

"Encumbrances" means a lien, claim, judgment, charge, mortgage, security interest, pledge, escrow, equity or other encumbrance other than restrictions pursuant to any applicable state or federal securities laws.

“Exchange Act” means the Securities Exchange Act of 1934, as amended.

“FINRA” means the Financial Industry Regulatory Authority.

“GAAP” means U.S. generally accepted accounting principles consistently applied.

“Governmental Entity” means any national, federal, state, municipal, local, territorial, foreign or other government or any department, commission, board, bureau, agency, regulatory authority or instrumentality thereof, or any court, judicial, administrative or arbitral body or public or private tribunal.

“Indebtedness” means (1) all indebtedness for borrowed money, (2) all obligations issued, undertaken or assumed as the deferred purchase price of property or services (including, without limitation, “capital leases” in accordance with GAAP) (other than trade payables entered into in the ordinary course of business), (3) all reimbursement or payment obligations with respect to letters of credit, surety bonds and other similar instruments, (4) all obligations evidenced by notes, bonds, debentures or similar instruments, including obligations so evidenced incurred in connection with the acquisition of property, assets or businesses, (5) all indebtedness created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to any property or assets acquired with the proceeds of such indebtedness (even though the rights and remedies of the seller or bank under such agreement in the event of default are limited to repossession or sale of such property), (6) all monetary obligations under any leasing or similar arrangement which, in connection with GAAP, consistently applied for the periods covered thereby, is classified as a capital lease, and (7) all indebtedness referred to in clauses (1) through (6) above secured by (or for which the holder of such Indebtedness has an existing right, contingent or otherwise, to be secured by) any mortgage, lien, pledge, charge, security interest or other encumbrance upon or in any property or assets (including accounts and contract rights) owned by any Person, even though the Person which owns such assets or property has not assumed or become liable for the payment of such indebtedness.

“Key Employee” means each of the Company’s executive officers, as identified in the SEC Reports.

“Knowledge” by a Person of a particular fact or other matter means the following: (a) if the Person is an individual, that such individual is actually aware; and (b) if the Person is an Entity, any executive officer of such Person is actually aware.

“Lien” means any mortgage, lien, pledge, charge, security interest or other similar encumbrance upon or in any property or assets (including accounts and contract rights).

“Majority Subsidiary” means any corporation, association trust, limited liability company, partnership, joint venture or other business association or entity, at least 50% of the outstanding voting securities of which are at the time owned or record by the Company.

“Material Adverse Effect” means any (i) adverse effect on the issuance or validity of the Shares or the transactions contemplated hereby or on the ability of the Company to perform its

obligations under this Agreement, or (ii) material adverse effect on the condition (financial or otherwise), properties, assets, liabilities, business or operations of the Company.

“Material Contract” means all written and oral contracts, agreements, deeds, mortgages, leases, subleases, licenses, instruments, notes, commitments, commissions, undertakings, arrangements and understandings which are required to be filed as exhibits by the Company with the Commission pursuant to Items 601(b)(2), 601(b)(4) or 601(b)(10) of Regulation S-K promulgated by the Commission.

“Person” means and includes all natural persons, corporations, business trusts, associations, companies, partnerships, joint ventures, limited liability companies and other entities and governments and agencies and political subdivisions.

“Permitted Liens” means any Lien disclosed in an SEC Report and: (1) any Lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings for which adequate reserves have been established in accordance with GAAP, (2) any statutory Lien arising in the ordinary course of business by operation of law with respect to a liability that is not yet due or delinquent, (3) any Lien created by operation of law, such as materialmen’s liens, mechanics’ liens and other similar liens, arising in the ordinary course of business with respect to a liability that is not yet due or delinquent or that are being contested in good faith by appropriate proceedings, (4) Liens (a) upon or in any equipment acquired or held by the Company or any of its Subsidiaries to secure the purchase price of such equipment or indebtedness incurred solely for the purpose of financing the acquisition or lease of such equipment, or (b) existing on such equipment at the time of its acquisition, provided that the Lien is confined solely to the property so acquired and improvements thereon, and the proceeds of such equipment, (5) Liens incurred in connection with the extension, renewal or refinancing of the indebtedness secured by Liens of the type described in clauses (1) through (4) above, provided that any extension, renewal or replacement Lien shall be limited to the property encumbered by the existing Lien and the principal amount of the Indebtedness being extended, renewed or refinanced does not increase, (7) leases, subleases, licenses and sublicenses granted to others in the ordinary course of the Company’s business, not interfering in any material respect with the business of the Company and its Subsidiaries taken as a whole, and (8) Liens in favor of customs and revenue authorities arising as a matter of law to secure payments of custom duties in connection with the importation of goods.

“Purchaser” has the meaning assigned to it in the introductory paragraph of this Agreement and shall include any Affiliates of the Purchaser.

“Registration Statement” means a registration statement or registration statements of the Company filed under the Securities Act pursuant to Section 8 hereof.

“Required Holders” means Purchasers who purchase, in the aggregate, at least a majority of the total number of Shares offered and sold hereby.

“Trading Market” means the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE Amex Equities, the

10. Enforcement.

10.1. Cumulative Remedies. None of the rights, powers or remedies conferred upon the Purchasers on the one hand or the Company on the other hand shall be mutually exclusive, and each such right, power or remedy shall be cumulative and in addition to every other right, power or remedy, whether conferred by this Agreement or now or hereafter available at law, in equity, by statute or otherwise.

10.2. No Implied Waiver. Except as expressly provided in this Agreement, no course of dealing between the Company and the Purchasers or any other holder of shares of Common Stock and no delay in exercising any such right, power or remedy conferred hereby or now or hereafter existing at law in equity, by statute or otherwise, shall operate as a waiver of, or otherwise prejudice, any such right, power or remedy.

11. Confidentiality. Except as otherwise agreed in writing by the Company, each Purchaser agrees that it will use reasonable care to keep confidential and not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless the Purchaser can demonstrate that such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 11 by the Purchaser), (b) is or has been made known or disclosed to the Purchaser by a third party without knowledge by the Purchaser of any obligation of confidentiality such third party owes to the Company with respect to the information, or (c) was known to the Purchaser prior to disclosure to the Purchaser by the Company; provided, however, that the Purchaser may disclose confidential information to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company provided that the Purchaser informs such person that such information is confidential and directs such person to maintain the confidentiality of such information. Notwithstanding anything to the contrary herein, the confidentiality obligations of this Section 11 shall survive the termination of this Agreement.

12. Miscellaneous.

12.1. Waivers and Amendments. Upon the approval of the Company and the written consent of the Required Holders, the obligations of the Company and the rights of the Purchasers under this Agreement may be waived (either generally or in a particular instance, either retroactively or prospectively and either for a specified period of time or indefinitely). Neither this Agreement, nor any provision hereof, maybe changed, waived, discharged or terminated orally or by course of dealing, but only by an instrument in writing executed by the Company and the Required Holders.

12.2. Notices. All notices, requests, consents, and other communications under this Agreement shall be in writing and shall be deemed delivered (a) when delivered, if delivered

personally, (b) four business days after being sent by registered or certified mail, return receipt requested, postage prepaid; (c) one business day after being sent via a reputable international overnight courier service guaranteeing next business day delivery, or (d) when receipt is acknowledged, in the case of facsimile, in each case to the intended recipient as set forth below, with respect to the Company, and to the addresses set forth on Schedule I with respect to the Purchasers.

If to the Company:

Arrowhead Research Corporation
200 South Lake Avenue, Suite 300
Pasadena, CA 91101
Attention: Chief Financial Officer
Facsimile No.: ((626) 304-3401

with a copy to:

Ropes & Gray LLP
Three Embarcadero Center
San Francisco, CA 94111
Attention: Ryan Murr, Esq.
Facsimile No.: (415) 315-6026

or at such other address as the Company or each Purchaser each may specify by written notice to the other parties hereto in accordance with this Section 12.2.

12.3. No Waivers. No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

12.4. Successors and Assigns. All the terms and provisions of this Agreement shall be binding upon and inure to the benefit of and be enforceable by the respective parties hereto, the successors and permitted assigns of each Purchaser and the successors of the Company, whether so expressed or not. None of the parties hereto may assign its rights or obligations hereof without the prior written consent of the Company, except that a Purchaser may, without the prior consent of the Company, assign its rights to purchase the Shares hereunder to any of its Affiliates (provided such Affiliate agrees to be bound by the terms of this Agreement and makes the same representations and warranties set forth in Section 3 hereof). This Agreement shall not inure to the benefit of or be enforceable by any other Person.

12.5. Headings. The headings of the Sections and paragraphs of this Agreement have been inserted for convenience of reference only and do not constitute a part of this Agreement.

12.6. Governing Law. This Agreement shall be governed by and construed in

accordance with the laws of the State of California without regard to its conflict of law principles.

12.7. Jurisdiction. Any suit, action or proceeding seeking to enforce any provision of, or based on any matter arising out of or in connection with, this Agreement or the transactions contemplated hereby shall be brought in any federal or state court located in the City and County of Los Angeles, California, and each of the parties hereby consents to the jurisdiction of such courts (and of the appropriate appellate courts therefrom) in any such suit, action or proceeding and irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such suit, action or proceeding in any such court or that any such suit, action or proceeding which is brought in any such court has been brought in an inconvenient forum. Process in any such suit, action or proceeding may be served on any party anywhere in the world, whether within or without the jurisdiction of any such court. Without limiting the foregoing, each party agrees that service of process on such party as provided in Section 12.2 shall be deemed effective service of process on such party.

12.8. Waiver of Jury Trial. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW WHICH CANNOT BE WAIVED, THE PURCHASERS AND THE COMPANY HEREBY WAIVE AND COVENANT THAT NEITHER THE COMPANY NOR THE PURCHASERS WILL ASSERT, ANY RIGHT TO TRIAL BY JURY ON ANY ISSUE IN ANY PROCEEDING, WHETHER AS PLAINTIFF, DEFENDANT OR OTHERWISE, IN RESPECT OF ANY ISSUE, CLAIM, DEMAND, ACTION OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, ANY OTHER AGREEMENT OR THE SUBJECT MATTER HEREOF OR THEREOF OR IN ANY WAY CONNECTED WITH, RELATED OR INCIDENTAL TO THE DEALINGS OF THE PURCHASER AND THE COMPANY HEREUNDER OR THEREUNDER, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING AND WHETHER IN TORT OR CONTRACT OR OTHERWISE. The Company acknowledges that it has been informed by the Purchasers that the provisions of this Section 12.8 constitute a material inducement upon which the Purchaser are relying and will rely in entering into this Agreement. The Purchaser or the Company may file an original counterpart or a copy of this Section 12.8 with any court as written evidence of the consent of the Purchaser and the Company to the waiver of the right to trial by jury.

12.9. Counterparts; Effectiveness. This Agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, with the same effect as if all parties had signed the same document. All such counterparts (including counterparts delivered by facsimile or other electronic format) shall be deemed an original, shall be construed together and shall constitute one and the same instrument. This Agreement shall become effective when each party hereto shall have received counterparts hereof signed by all of the other parties hereto.

12.10. Entire Agreement. This Agreement contain the entire agreement among the parties hereto with respect to the subject matter hereof and thereof and, except as set forth below, such agreements supersede and replace all other prior agreements, written or oral, among the parties hereto with respect to the subject matter hereof and thereof. Notwithstanding the foregoing, this Agreement shall not supersede any confidentiality or other non-disclosure

agreements that may be in place between the Company and any Purchaser.

12.11. Severability. If any provision of this Agreement shall be found by any court of competent jurisdiction to be invalid or unenforceable, the parties hereby waive such provision to the extent that it is found to be invalid or unenforceable. Such provision shall, to the maximum extent allowable by law, be modified by such court so that it becomes enforceable, and, as modified, shall be enforced as any other provision hereof, all the other provisions hereof continuing in full force and effect.

* * *

IN WITNESS WHEREOF, the parties hereto have caused this Subscription Agreement to be duly executed as of the day and year first written above.

THE COMPANY

Arrowhead Research Corporation

By: _____
Name: _____
Title: _____

[PURCHASER'S SIGNATURE PAGE SEPARATELY ATTACHED]

PURCHASER SIGNATURE PAGE

The undersigned Purchaser hereby executes the Subscription Agreement with Arrowhead Research Corporation (the “**Company**”) and hereby authorizes this signature page to be attached to a counterpart of such document executed by a duly authorized officer of the Company.

**Number of Shares
to be Purchased:** 6,756,756

**Name of Purchaser
(PLEASE TYPE OR PRINT)**

U.S. Taxpayer ID No., if any: By: _____

Name (print) _____

Title: _____

Address: _____

Facsimile: _____

Email: _____

Check box if not a U.S. Purchaser (see Section 3.13 and Annex A)

Please set out below your registration requirements. *If securities are to be registered in the name of more than one entity, provide the information requested below for each entity. (Please use multiple pages, one for each entity.)*

**Name in which Securities are
to be registered:** _____

**Number of Shares to be
purchased:** _____

**Address of registered holder (if
different from above):** _____

**Number of Shares of the Company’s
Common Stock currently held by the above named entity¹:** _____

**Contact name and telephone
number regarding settlement**

¹ This information will be included in the selling stockholder table in the Registration Statement. If left blank, the Company will reflect in the Registration Statement that no shares are currently held (except to the extent that the Company has actual knowledge of additional holdings).

and registration:

Name

Telephone Number

Email

ANNEX A

NON-U.S. PURCHASER
REPRESENTATIONS, WARRANTIES AND COVENANTS

(Applicable only if checking "Not a U.S. Person" on signature page)

1. Purchaser represents and warrants that it (a) is not a "U.S. Person" (defined below), (b) is not acquiring the Shares for any U.S. Person, and (c) is not an underwriter, dealer or other person who must contractually participate in the distribution of the Shares.

For purposes of this Annex A, "**U.S. Person**" means:

- Any natural person residing in the United States (regardless of whether they have U.S. citizenship),
- Any partnership or corporation organized or incorporated under U.S. laws. Non-U.S. partnerships and corporations formed by U.S. persons principally to invest in unregistered securities are also U.S. persons unless organized and owned by accredited investors (within the meaning of Regulation D) who are not natural persons, estates or trusts.
- Any agency or branch of a foreign entity located in the United States.
- Any non-discretionary account held by a dealer or other fiduciary for the benefit or account of a U.S. person.
- Any discretionary account held by a dealer or other fiduciary organized, incorporated or resident in the United States; provided, however, that the following is not a U.S. person: any discretionary account held by a dealer or other fiduciary for the benefit or account of a non-U.S. person, even if the dealer or fiduciary is organized, incorporated or physically resides in the United States.
- Any trust or estate with a trustee, executor or administrator who is a U.S. person unless:
 - the trust or estate gives sole or shared investment power to a non-U.S. trustee, executor or administrator, as applicable; and
 - (in the case of a trust) no beneficiary and no settler of a revocable trust is a U.S. person or (in the case of an estate) the estate is governed by a foreign law.

2. Purchaser understands and agrees that the offering and sale of the Shares has not been registered under the Securities Act or any foreign securities laws and is being made in reliance upon Regulation S under the Securities Act. Purchaser agrees to resell the Shares only according with Regulation S or pursuant to a registration statement covering the resale of the Shares or an available registration exemption.

3. Purchaser agrees not to hedge the Shares securities except in compliance with the Securities Act.

4. Purchaser agrees that the certificates representing the Shares shall bear a legend stating that the transfer of the Shares is prohibited except in compliance with Regulation S, under a registration statement covering the securities or an available registration exemption, and that hedging transactions involving these securities are prohibited except in compliance with the Securities Act.

5. Purchaser agrees that the Company shall not, and shall instruct the transfer agent for the Common Stock not to, register any transfer of Shares that does not comply with Regulation S or is not made under a registration statement covering the securities or an available registration exemption.